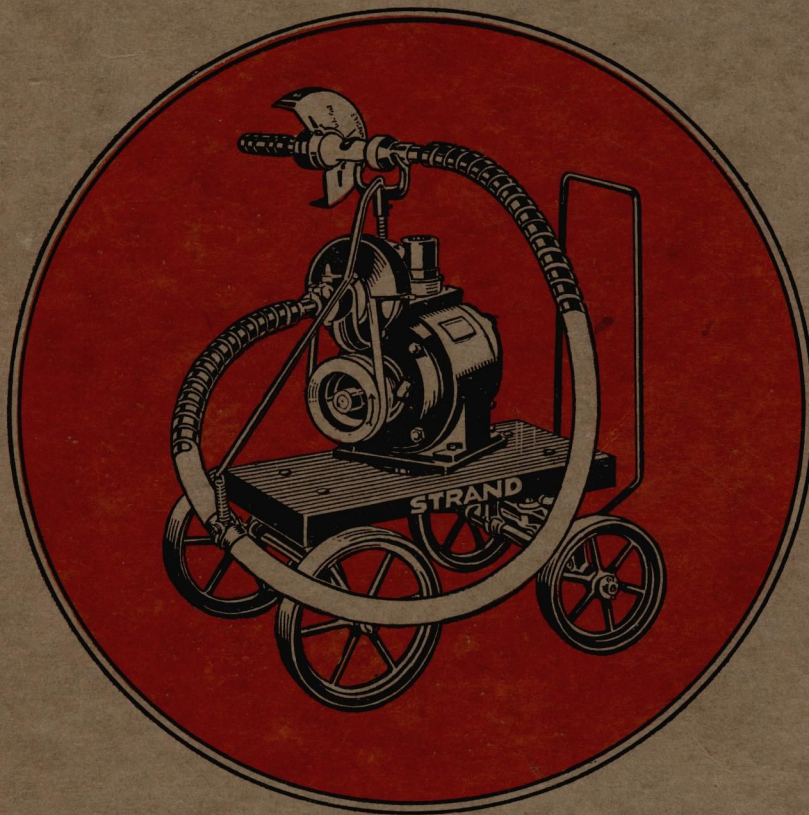




# FLEXIBLE SHAFTS AND EQUIPMENTS



CATALOG NO. 26

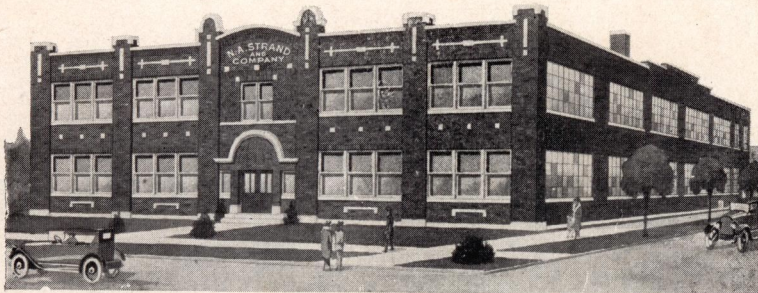
**N. A. STRAND & CO.**  
**CHICAGO**

5001-5009 NO. LINCOLN STREET  
U. S. A.









Established 1905

# N. A. STRAND & COMPANY

## CHICAGO

*Manufacturers of*

# FLEXIBLE SHAFTS *and* EQUIPMENTS

GENERAL OFFICES AND FACTORY  
CHICAGO, U. S. A.  
5001-5009 NORTH LINCOLN STREET

CATALOG NO. 26

TELEGRAPHIC CODES PAGES 62-63  
CABLE ADDRESS, STRANDFLEX, CHICAGO, U. S. A.  
CODES USED, WESTERN UNION AND BENTLEY'S





TRADE MARK  
Registered U. S. Patent Office

### *Introductory*

## **FLEXIBLE SHAFTS *and* EQUIPMENTS**

**I**N THE presentation of this catalog it is our desire to bring to the attention of manufacturers in nearly all lines of industries the advantages in the use of *Strand Flexible Shaft Equipments*. The *Strand* method of manufacturing and operating *Flexible Shafts* is original and unique; *we are the originators of the three-speed motor countershaft drive for flexible shafts and many useful attachments for several classes of work.*

You will readily observe, in looking through this catalog, the many advantages to be obtained by the installation in your shop of one or more of these *Strand flexible shaft equipments*. *Grinding, polishing, buffing, scratch brushing, rotary filing, sanding, drilling, reaming, tire buffing, nut setting, screw driving, filler rubbing, and many other operations may be rapidly and accurately performed. The Strand flexible shafts are guaranteed both as to workmanship and material. Many years of practical experience in the manufacture of flexible shafts and equipments have not only maintained but enhanced Strand leadership in its field.*

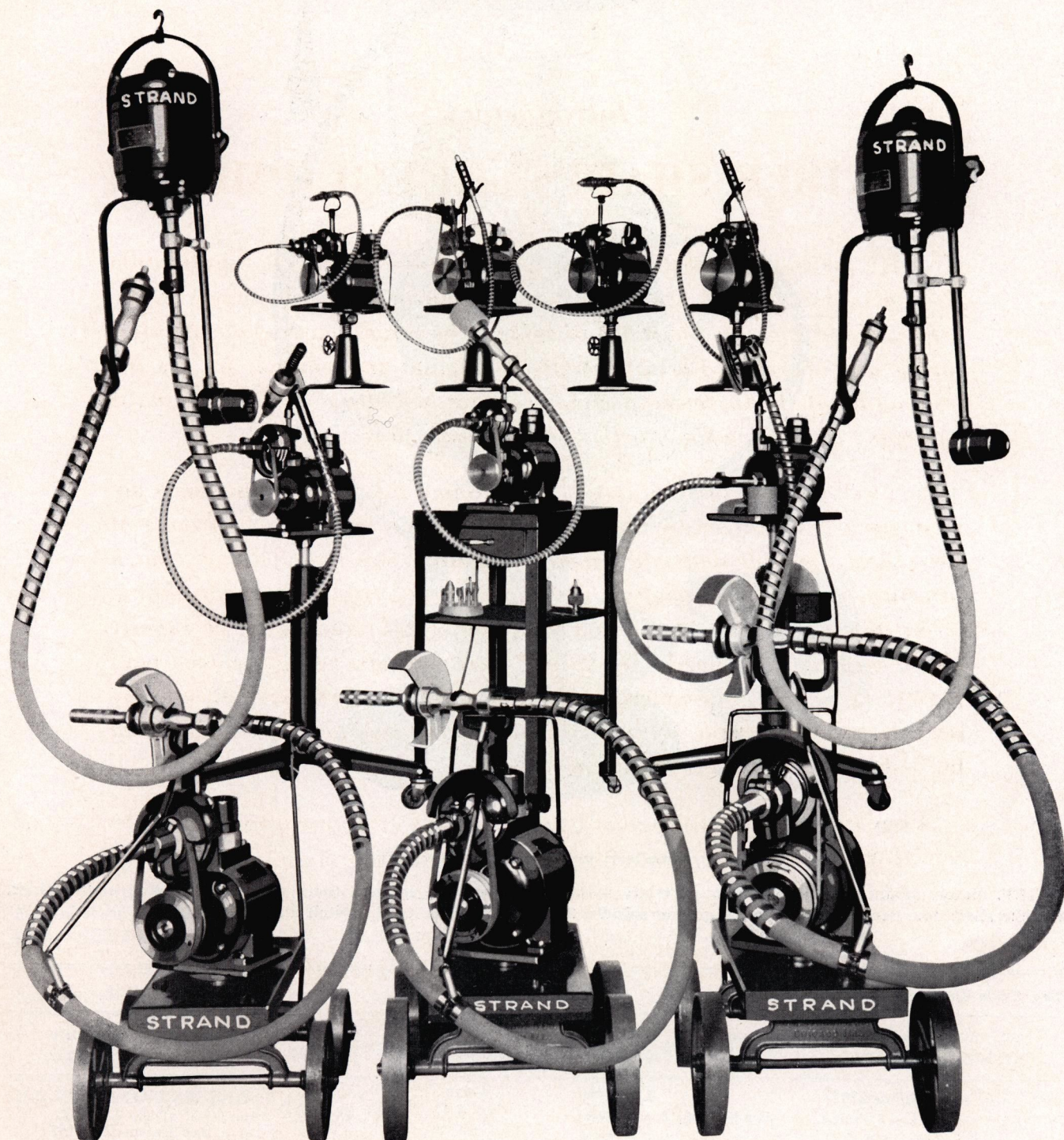
We solicit your inquiries, assuring you of our very close co-operation in selecting the proper equipment for your requirements.

**N. A. Strand & Company**  
CHICAGO





*Our Flexible Shaft Machines Are Full Ball Bearing and Built to Give Long and Satisfactory Service. Highest Quality Workmanship and Materials*



*A Few of the Many Types and Sizes We Manufacture*





## TYPE M2



### STANDARD EQUIPMENT FURNISHED

$\frac{1}{8}$  H.P. motor, mounted on bench type, portable, swivel and adjustable column, three-speed ball bearing countershaft, flexible shaft four feet long, ball bearing hand spindle, 2 bel's, wrenches, cord, switch and plug.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating                                 | Wheel Capacity                    | Speeds R. P. M.      | Size of Flexible Shaft                                           | Shipping Weight | Extra Attachments Fitting This Machine       |
|---------------|-------------------------------------------------|-----------------------------------|----------------------|------------------------------------------------------------------|-----------------|----------------------------------------------|
| $\frac{1}{8}$ | 110 or 220<br>60 Cy. 1 Phase<br>110 or 220 D.C. | 2 x $\frac{1}{4}$ x $\frac{1}{4}$ | 1700<br>3000<br>5200 | Core<br>$\frac{3}{16}$ " x 4'<br>Casing<br>$\frac{1}{2}$ " O. D. | 65 Lbs.         | A1-J-M1-K-O1-P-N-W-Z-U<br>See Pages 50 to 57 |

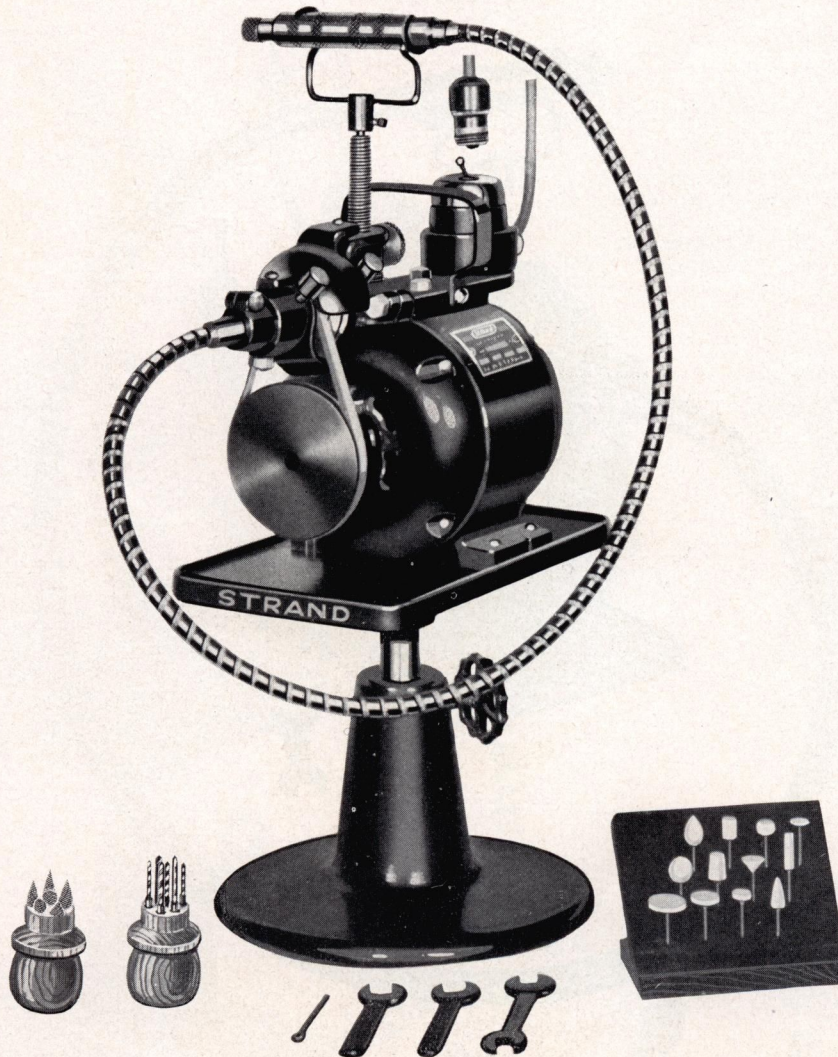
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## TYPE MS2



### STANDARD EQUIPMENT FURNISHED

$\frac{1}{8}$  H.P. motor, mounted on bench type, portable, swivel and adjustable column, three-speed ball bearing countershaft, flexible shaft four feet long, ball bearing hand piece, 1 set (12) assorted shapes, mounted grinding wheels, 1 set (6) high speed drills, 1 set (6) assorted shapes, high speed hand cut rotary files, 2 belts, wrenches, cord, switch and plug.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating                                  | Capacity                                                                                           | Speeds<br>R. P. M.       | Size of<br>Flexible Shaft                                        | Shipping<br>Weight | Extra Attachments<br>Fitting This Machine    |
|---------------|--------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------|--------------------|----------------------------------------------|
| $\frac{1}{8}$ | 110 or 220<br>60 Cy. 1-Phase<br>110 or 220 D. C. | Drilling $\frac{3}{16}$ "<br>Grinding $3 \times \frac{1}{4}$ "<br>Rotary Filing<br>$\frac{1}{4}$ " | 3,400<br>6,000<br>10,400 | Core<br>$\frac{3}{16}$ " x 4'<br>Casing<br>$\frac{1}{2}$ " O. D. | 75 Lbs.            | B1-J-M1-K-O1-P-N-W-Z-U<br>See Pages 50 to 57 |

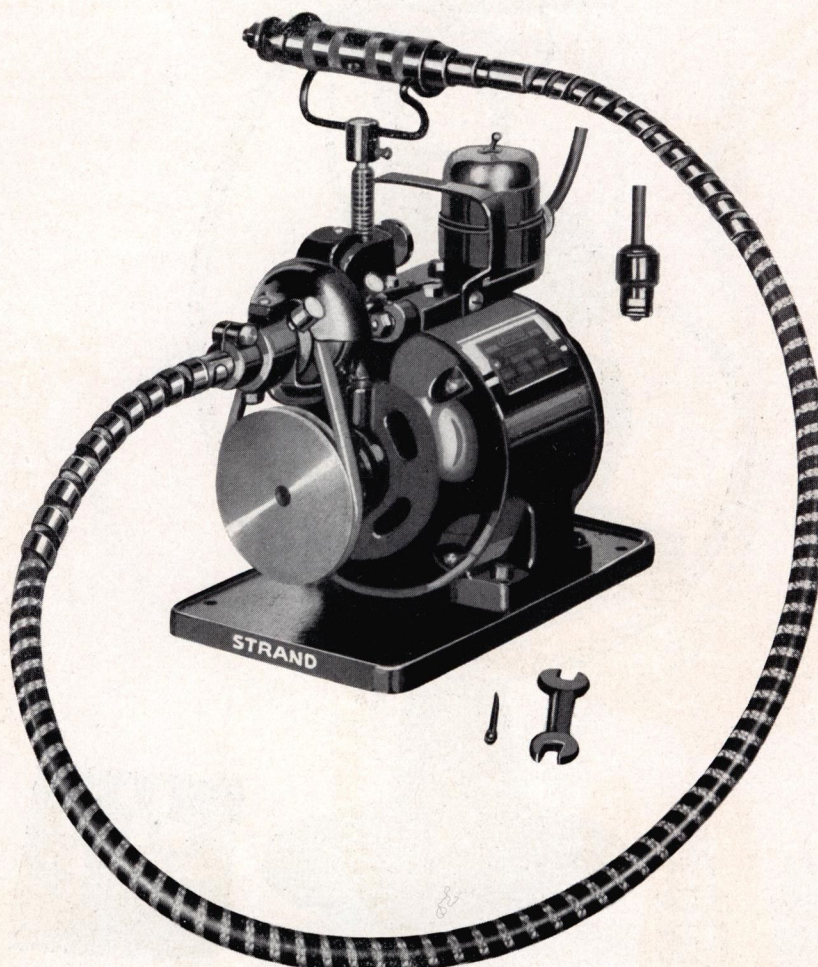
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## TYPE MS4



### STANDARD EQUIPMENT FURNISHED

$\frac{1}{4}$  H. P. motor, mounted on cast iron base, three-speed ball bearing countershaft, flexible shaft five feet long, ball bearing hand spindle, 2 belts, wrenches, cord, switch and plug. NOTE—Standard speeds furnished on this machine unless otherwise specified, 1700, 3000, 5200 R.P.M. High speeds of 3400, 6000, 10,400 R.P.M. furnished when so ordered.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating                                  | Wheel Capacity                    | Speeds R. P. M.      | Size of Flexible Shaft                                           | Shipping Weight | Extra Attachments Fitting This Machine                                            |
|---------------|--------------------------------------------------|-----------------------------------|----------------------|------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------|
| $\frac{1}{4}$ | 110 or 220<br>60 Cy. 1 Phase<br>110 or 220 D. C. | 4 x $\frac{3}{8}$ x $\frac{3}{8}$ | 1700<br>3000<br>5200 | Core<br>$\frac{5}{16}$ " x 5'<br>Casing<br>$\frac{5}{8}$ " O. D. | 65 Lbs.         | A1-M-T-J-M1-N1-H-K-O1-<br>G-Y-P-N-10M-W-Z-U-<br>E1-F1-N1-W1<br>See Pages 50 to 57 |

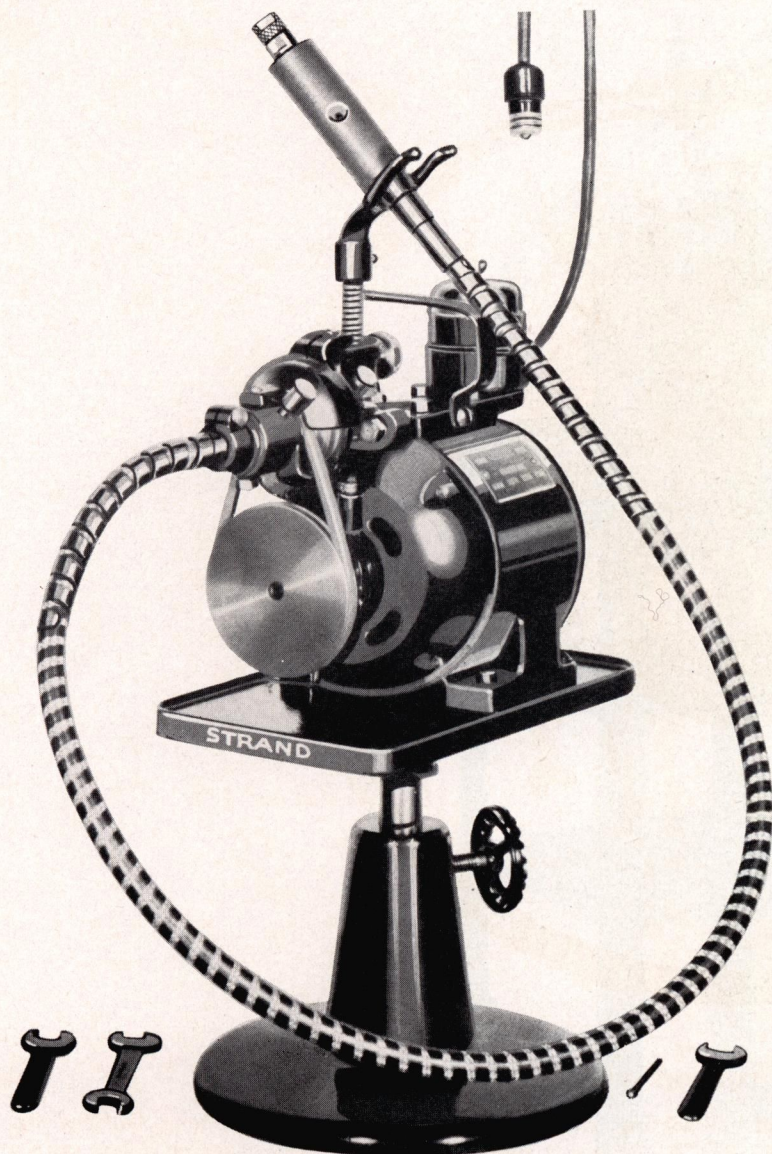
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

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## TYPE RF-M4



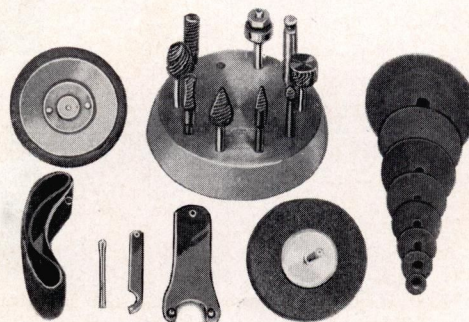
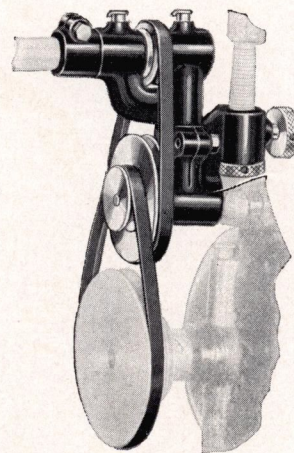
### SPECIAL ATTACHMENT 10M Ball Bearing Throughout

10,000 R.P.M. obtained with this High Speed Attachment.

Interchangeable with this Machine. Change over can be made in less than one minute.

Not included with regular equipment. Extra Attachment subject to additional price.

### 10M



### STANDARD EQUIPMENT FURNISHED

$\frac{1}{4}$  H.P. motor, mounted on bench type portable swivel and adjustable column, three-speed ball bearing countershaft, flexible shaft five feet long, ball bearing hand piece, 1 set (8) assorted shapes rotary files, file holder, 3 wheel spindles, 9 assorted grinding wheels, 3 x 1 rubber sanding drum, 2 belts, wrenches, cord, switch and plug. NOTE—The 10M Attachment is furnished as an extra attachment at an additional price.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating                                  | Speeds R. P. M.      | Size of Flexible Shaft                                           | Height Base to Top of Motor                                | Shipping Weight | Extra Attachments Fitting This Machine                                   |
|---------------|--------------------------------------------------|----------------------|------------------------------------------------------------------|------------------------------------------------------------|-----------------|--------------------------------------------------------------------------|
| $\frac{1}{4}$ | 110 or 220<br>60 Cy. 1 Phase<br>110 or 220 D. C. | 1700<br>3000<br>5200 | Core<br>$\frac{5}{16}$ " x 5'<br>Casing<br>$\frac{5}{8}$ " O. D. | Lowest Point<br>16 $\frac{1}{2}$ "<br>Highest Point<br>20" | 95 Lbs.         | B1-M-T-J-M1-N1-10M-W-Z-U-P-H-K-O1-G-Y-P-N-E1-F1-W1<br>See Pages 50 to 57 |

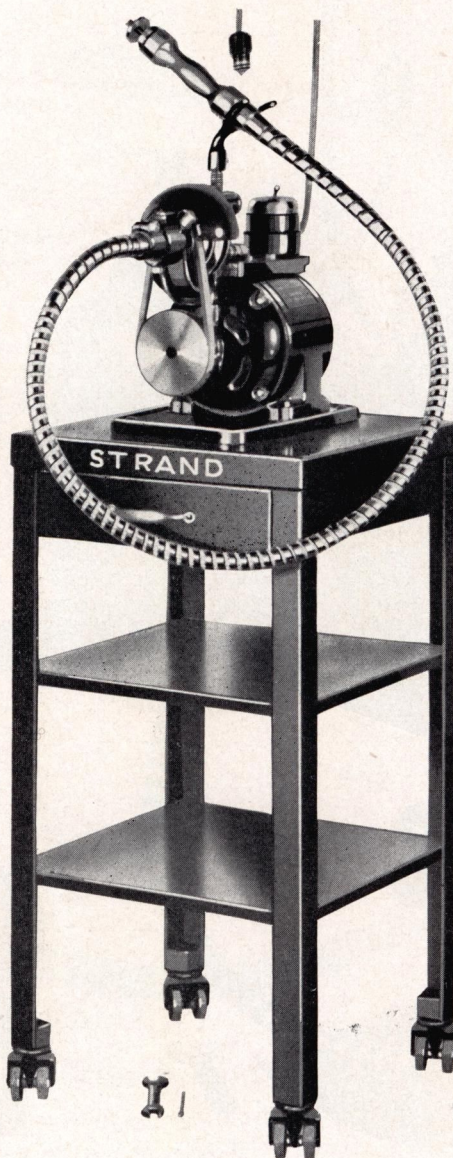
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





# TYPE M5



## STANDARD EQUIPMENT FURNISHED

1/4 H.P. motor, mounted on 30" steel stand with tool drawer, three-speed ball bearing countershaft, flexible shaft five feet long, metal casing, ball bearing hand spindle, 2 belts, wrenches, cord, switch and plug.

See Code Page 62

## SPECIFICATIONS

| H. P. | Standard Rating                                        | Speeds R. P. M.     | Wheel Capacity | Size of Flexible Shaft                      | Shipping Weight                                 | Extra Attachments Fitting This Machine                                                                       |
|-------|--------------------------------------------------------|---------------------|----------------|---------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| 1/4   | 110 or 220<br>60 Cy. 1 Phase<br>or<br>110 or 220 D. C. | 900<br>1800<br>3600 | 5 x 1/2 x 3/8  | Core<br>7/8" x 5'<br>Casing<br>1 1/8" O. D. | With Stand<br>115 Lbs.<br>Less Stand<br>70 Lbs. | A1-F-M-L-D1-V-J-M1-N1-<br>H-K-I-O1-G-Y-P-N-W-<br>E-Z-U-E1-F1-W1-A-B-<br>Z1-J1-L1-L2-B2<br>See Pages 50 to 57 |

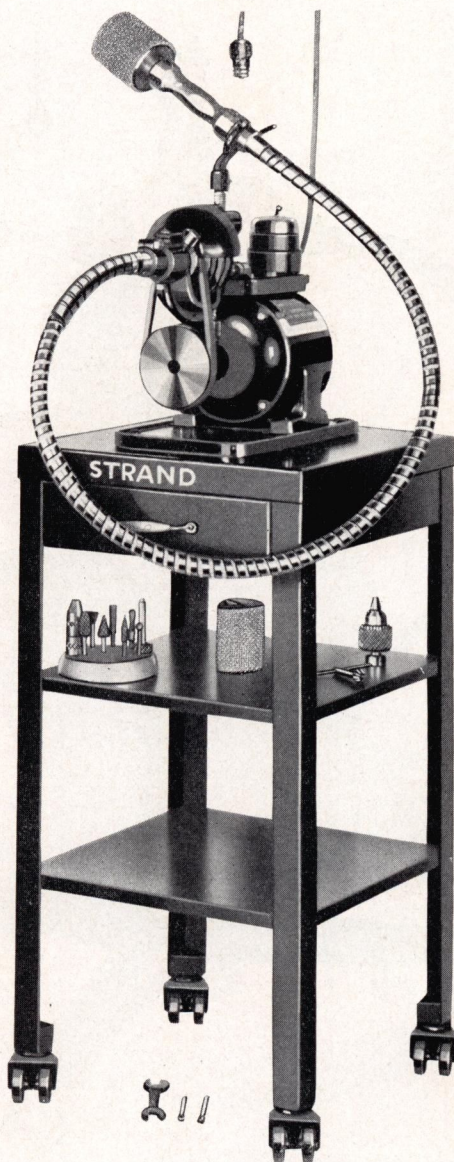
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## TYPE MP5



### STANDARD EQUIPMENT FURNISHED

$\frac{1}{4}$  H.P. motor, mounted on 30" steel stand with tool drawer, three-speed ball bearing countershaft, flexible shaft five feet long, metal casing, ball bearing spindle, 1 set (8) rotary files, rotary file chuck, internal grinding spindle, aluminum holder, 0 to  $\frac{3}{8}$ " drill chuck, 3 x 3 rubber sanding drum, 2 belts, wrenches, cord, switch and plug.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating                                           | Speeds R. P. M.     | Wheel Capacity                    | Size of Flexible Shaft                                           | Shipping Weight                               | Extra Attachments Fitting This Machine                                                             |
|---------------|-----------------------------------------------------------|---------------------|-----------------------------------|------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------|
| $\frac{1}{4}$ | 110 or 220<br>60 Cy. 1 Phase<br>or<br>110 or 220<br>D. C. | 900<br>1800<br>3600 | 5 x $\frac{1}{2}$ x $\frac{3}{8}$ | Core<br>$\frac{7}{16}$ " x 5'<br>Casing<br>$\frac{1}{8}$ " O. D. | Complete<br>125 Lbs.<br>Less Stand<br>80 Lbs. | A1-F-M-L-D1-V-M1-N1-<br>H-I-O1-G-Y-P-W-E-<br>E1-F1-W1-A-B-Z1-J1-<br>L1-L2-B2<br>See Pages 50 to 57 |

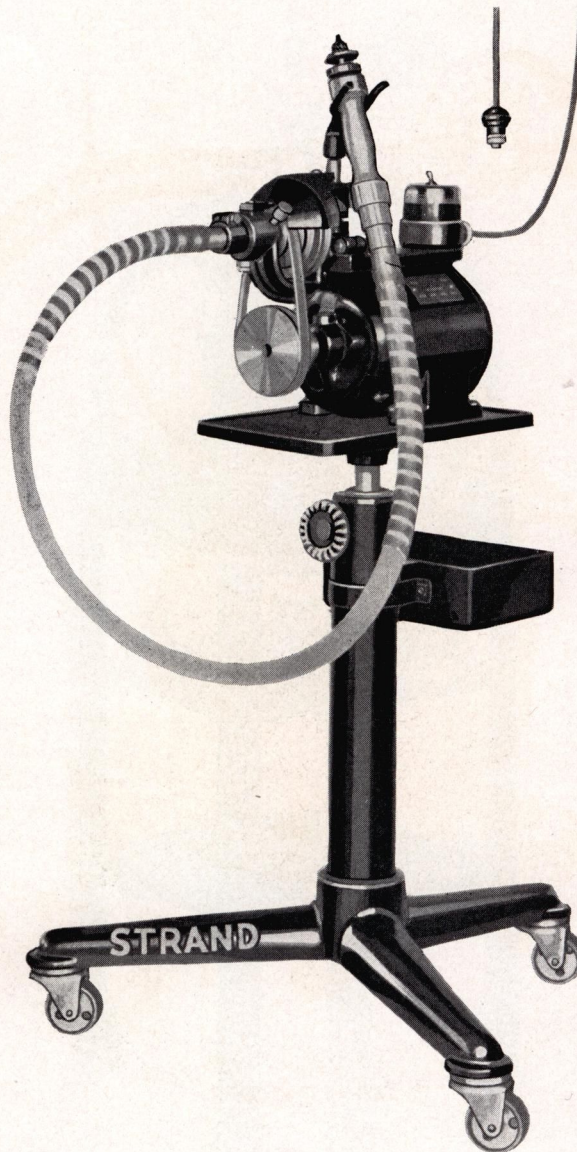
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## TYPE M5A



### STANDARD EQUIPMENT FURNISHED

$\frac{1}{3}$  H.P. motor, mounted on tripod stand, three-speed ball bearing countershaft, No. 5 x 5' flexible shaft, vulcanized covering, ball bearing spindle, tool box, 2 belts, switch, wiring, cord, plug and wrenches.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating                                        | Grinding Wheel Capacity           | Speeds R. P. M.     | Size of Flexible Shaft                                              | Shipping Weight | Extra Attachments Fitting This Machine                                                                                |
|---------------|--------------------------------------------------------|-----------------------------------|---------------------|---------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------|
| $\frac{1}{3}$ | 110 or 220<br>60 Cy. 1 Phase<br>or<br>110 or 220 D. C. | 5 x $\frac{3}{4}$ x $\frac{3}{8}$ | 900<br>1800<br>3600 | Core<br>$\frac{7}{16}$ " x 5'<br>Casing<br>1 $\frac{1}{16}$ " O. D. | 175 Lbs.        | A1-F-M-L-D1-V-J-M1-N1-<br>H-K-I-O1-G-Y-P-R1-S1-N-<br>W-T1-E-Z-U-E1-F1-W1-<br>A-B-Z1-J1-L1-L2-B2<br>See Pages 50 to 57 |

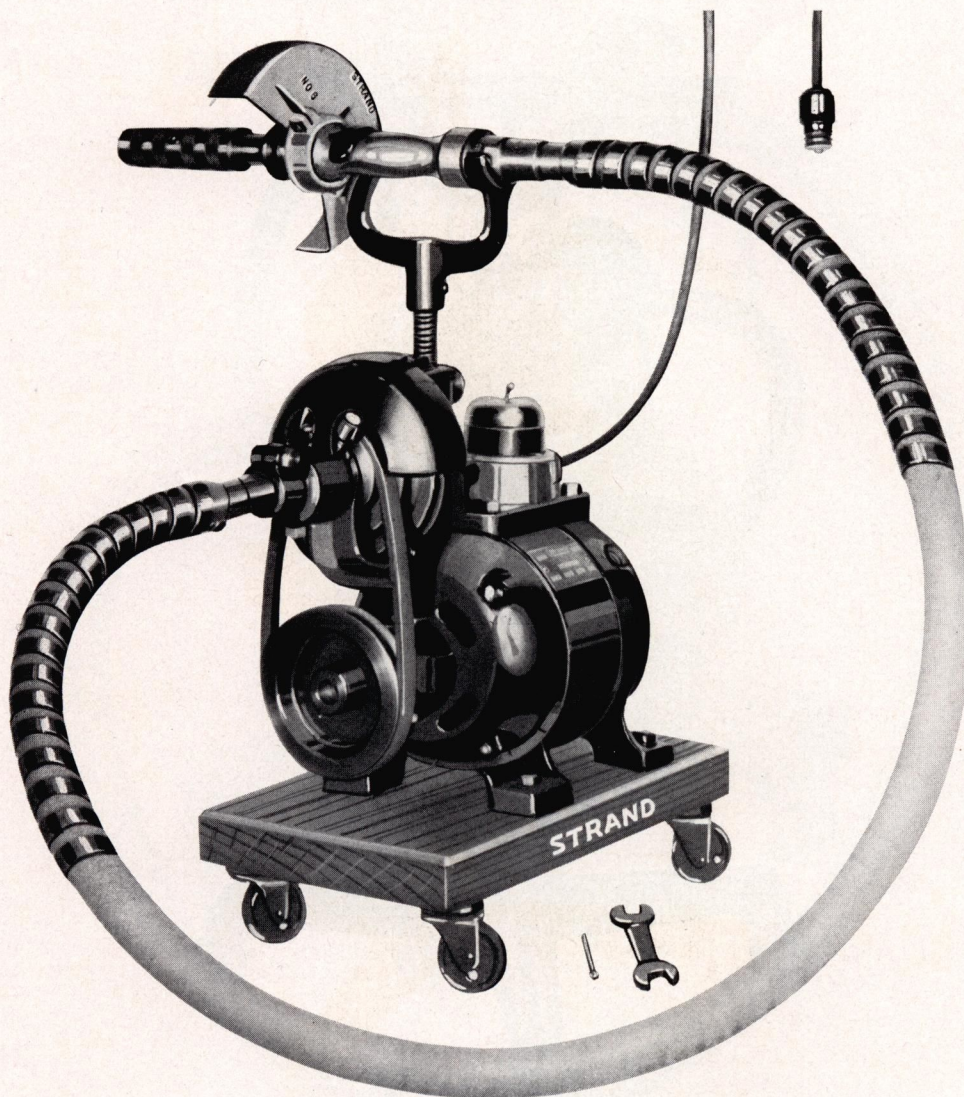
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## TYPE M6



### STANDARD EQUIPMENT FURNISHED

$\frac{1}{2}$  H.P. motor, mounted on caster base, three-speed ball bearing countershaft, No. 6 x 6' flexible shaft, vulcanized covering, ball bearing hand spindle, wheel guard, detachable handle, switch, wiring, cord, plug, 2 belts and wrenches.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating                                                    | Grinding Wheel Capacity           | Speeds R. P. M.      | Size of Flexible Shaft                                            | Shipping Weight | Extra Attachments Fitting This Machine                                                                                             |
|---------------|--------------------------------------------------------------------|-----------------------------------|----------------------|-------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------|
| $\frac{1}{2}$ | 110 or 220<br>60 Cycle<br>1, 2 or 3 Phase<br>or<br>110 or 220 D.C. | 6 x $\frac{3}{4}$ x $\frac{1}{2}$ | 1000<br>1800<br>3200 | Core<br>$\frac{1}{2}$ " x 6'<br>Casing<br>1 $\frac{5}{8}$ " O. D. | 150 Lbs.        | M-L-V-J-M1-N1-H-K-I-O1-<br>P1-G-Y-Q1-R1-P-S1-N-X-<br>W-T1-Z-U-C-E1-F1-G1-X1-<br>X2-W1-A-B-Y1-J1-A2-<br>B2-K1<br>See Pages 50 to 57 |

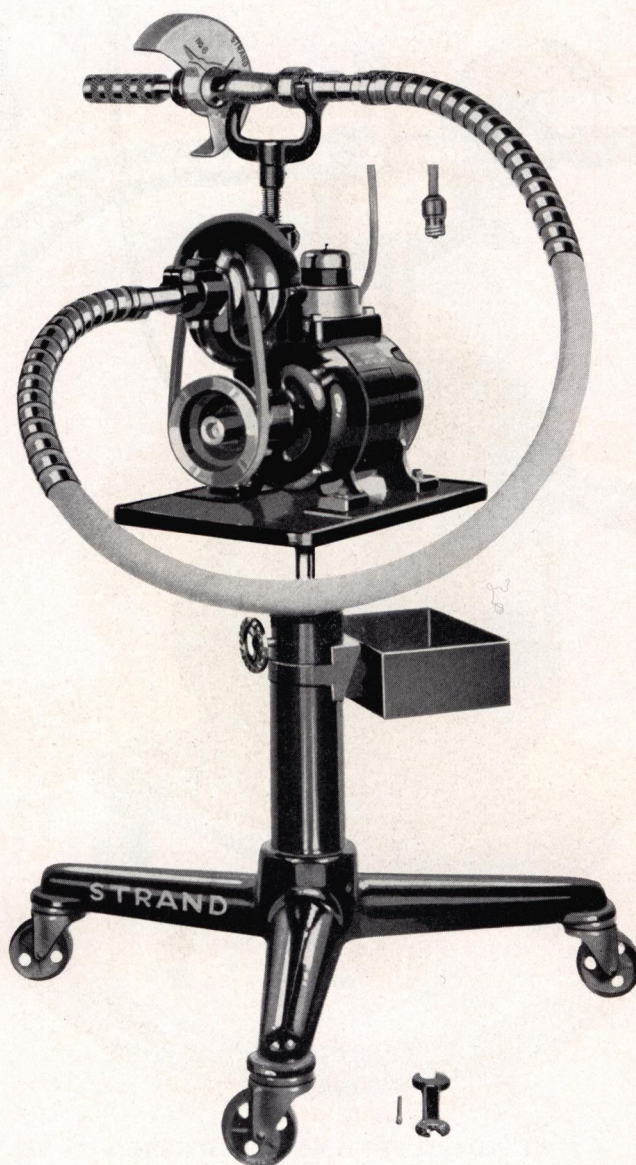
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## TYPE M6C



### STANDARD EQUIPMENT FURNISHED

$\frac{1}{2}$  H.P. motor, mounted on tripod stand, three-speed ball bearing countershaft, No. 6 x 6' flexible shaft, vulcanized covering, ball bearing spindle, wheel guard, detachable handle, 2 belts, switch, wiring, cord, plug and wrenches.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating                                                    | Grinding Wheel Capacity           | Speeds R. P. M.      | Size of Flexible Shaft                                            | Shipping Weight | Extra Attachments Fitting This Machine                                                                                          |
|---------------|--------------------------------------------------------------------|-----------------------------------|----------------------|-------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------|
| $\frac{1}{2}$ | 110 or 220<br>60 Cycle<br>1, 2 or 3 Phase<br>or<br>110 or 220 D.C. | 6 x $\frac{3}{4}$ x $\frac{1}{2}$ | 1000<br>1800<br>3200 | Core<br>$\frac{1}{2}$ " x 6'<br>Casing<br>$1\frac{5}{16}$ " O. D. | 175 Lbs.        | M-L-V-J-M1-N1-H-K-I-O1-<br>P1-G-Y-Q1-R1-P-S1-N-X-<br>W-T1-Z-U-C-E1-G1-W1-<br>B-A-Y1-J1-K1-A2-B2-<br>X1-X2<br>See Pages 50 to 57 |

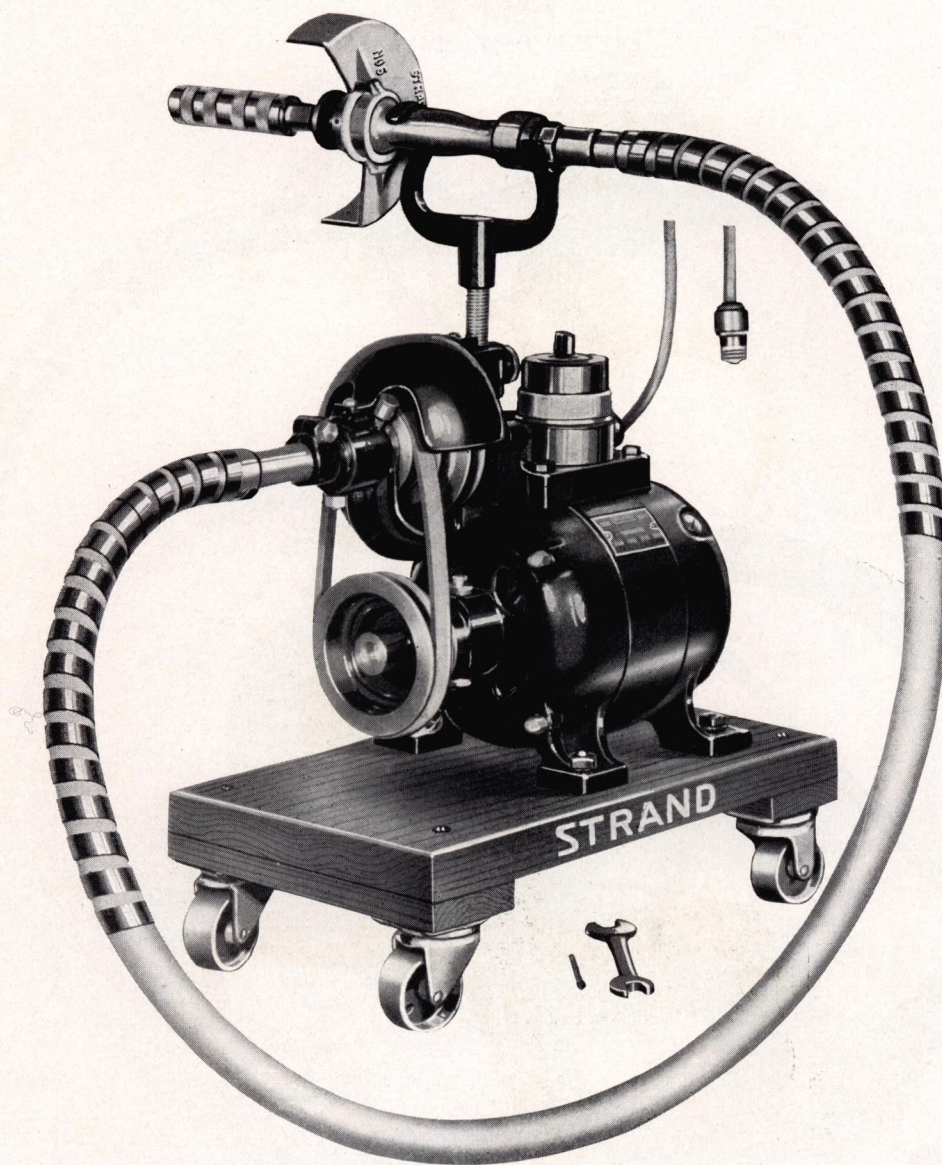
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## TYPE M6A



### STANDARD EQUIPMENT FURNISHED

$\frac{3}{4}$  H.P. motor, mounted on caster base, three-speed ball bearing countershaft, No. 6A x 6' flexible shaft, vulcanized covering, ball bearing spindle, wheel guard, detachable handle, switch, wiring, cord, plug, 2 belts and wrenches.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating            | Grinding Wheel Capacity | Speeds R. P. M.      | Size of Flexible Shaft                                                  | Shipping Weight | Extra Attachments Fitting This Machine                                                                                          |
|---------------|----------------------------|-------------------------|----------------------|-------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------|
| $\frac{3}{4}$ | 220<br>60 Cycle<br>3 Phase | 6 x 1 x $\frac{1}{2}$   | 1000<br>1800<br>3200 | Core<br>$\frac{9}{16}$ " x 6'<br><br>Casing<br>1 $\frac{5}{16}$ " O. D. | 165 Lbs.        | M-L-V-J-M1-N1-H-K-I-O1-<br>P1-G-Y-Q1-R1-P-S1-N-X-<br>W-T1-Z-U-C-E1-G1-W1-<br>B-A-Y1-J1-K1-A2-B2-<br>X1-X2<br>See Pages 50 to 57 |

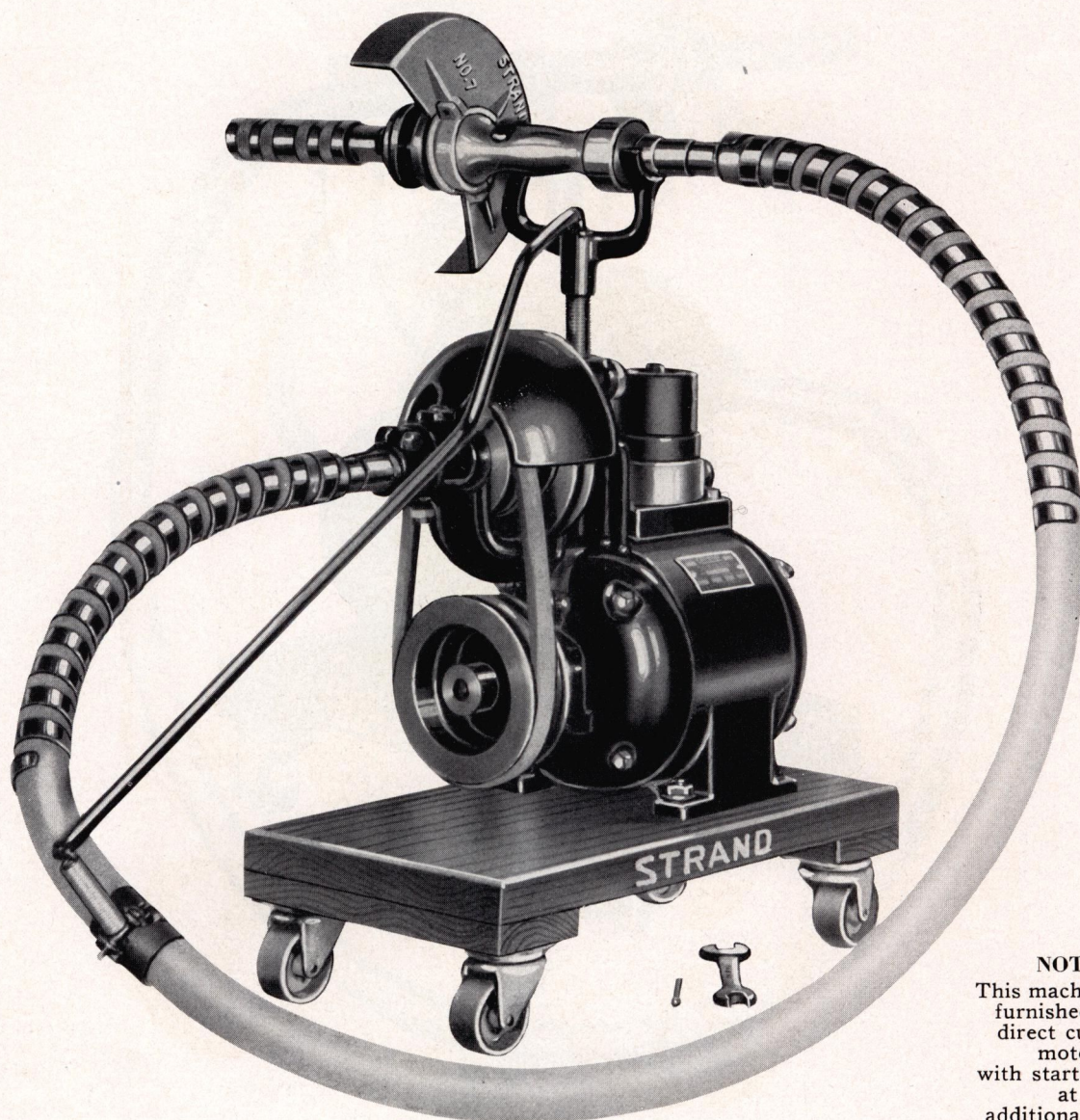
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





# TYPE M7 CASTER BASE MOUNTING



**NOTE**  
This machine also  
furnished with  
direct current  
motor  
with starting box  
at  
additional price.

## STANDARD EQUIPMENT FURNISHED

1 H.P. motor, mounted on caster base, three-speed ball bearing countershaft, No. 7 x 7' flexible shaft, vulcanized covering, ball bearing spindle, wheel guard, detachable handle, switch, wiring, 2 belts, wrenches and shaft support.

See Code Page 62

## SPECIFICATIONS

| H. P. | Standard Rating                   | Grinding Wheel Capacity | Speeds R. P. M.      | Size of Flexible Shaft                       | Shipping Weight | Extra Attachments Fitting This Machine                                                                 |
|-------|-----------------------------------|-------------------------|----------------------|----------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------|
| 1     | 220 or 440<br>60 Cycle<br>3 Phase | 8 x 1 x 3/4             | 1200<br>2400<br>2700 | Core<br>5/8" x 7'<br>Casing<br>1 7/16" O. D. | 175 Lbs.        | M-L-V-J-H-K-I-O1-P1-G-Y-Q1-R1-P-S1-N-X-W-T1-Z-U-C-H1-E1-G1-W1-B-A-Y1-K1-A2-X1-X2<br>See Pages 50 to 57 |

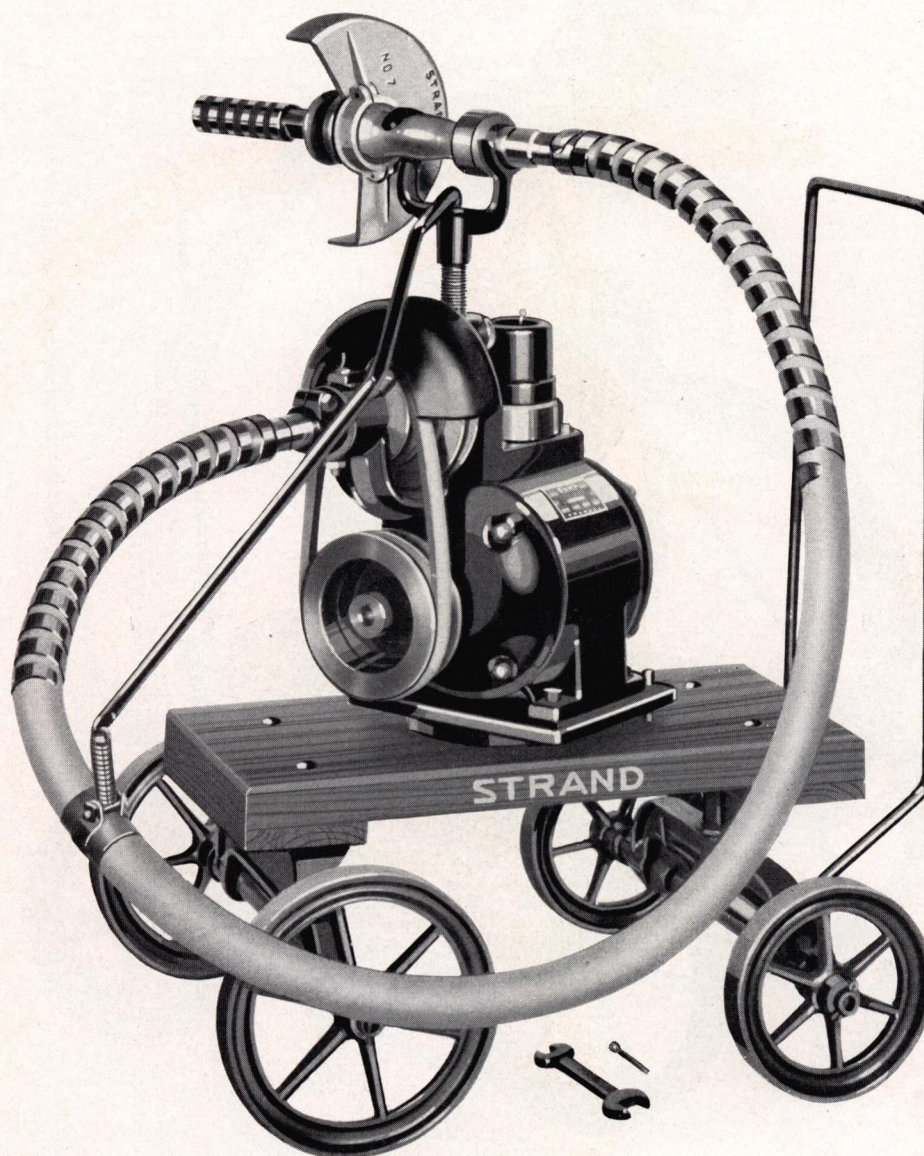
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





**TYPE M7**  
**FOUR WHEEL TRUCK MOUNTING**



**NOTE**

This machine also furnished with direct current motor with starting box at additional price.

**STANDARD EQUIPMENT FURNISHED**

1 H.P. motor, mounted on 4-wheel truck and swivel base plate, three-speed ball bearing countershaft, No. 7 x 7' flexible shaft, vulcanized covering, ball bearing spindle, wheel guard, detachable handle, switch, wiring, 2 belts, wrenches and shaft support.

See Code Page 62

**SPECIFICATIONS**

| H. P. | Standard Rating                   | Grinding Wheel Capacity | Speeds R. P. M.      | Size of Flexible Shaft                                             | Shipping Weight | Extra Attachments Fitting This Machine                                                               |
|-------|-----------------------------------|-------------------------|----------------------|--------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------|
| 1     | 220 or 440<br>60 Cycle<br>3 Phase | 8 x 1 x $\frac{3}{4}$   | 1200<br>2400<br>2700 | Core<br>$\frac{5}{8}$ " x 7'<br>Casing<br>1 $\frac{7}{16}$ " O. D. | 265 Lbs.        | M-L-V-J-H-K-I-O1-P1-G-Y-Q1-R1-P-S1-N-W-T1-Z-U-C-H1-E1-G1-W1-B-A-Y1-K1-A2-X1-X2<br>See Pages 50 to 57 |

Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## TYPE M7A



### NOTE

This machine also furnished with direct current motor with starting box at additional price.

### STANDARD EQUIPMENT FURNISHED

1½ H.P. motor, mounted on 4-wheel truck and swivel base plate, three-speed ball bearing countershaft, No. 7A x 7' flexible shaft, vulcanized covering, ball bearing spindle, wheel guard, detachable handle, switch, wiring, 2 belts, wrenches and shaft support.

See Code Page 62

### SPECIFICATIONS

| H. P. | Standard Rating                   | Grinding Wheel Capacity | Speeds R. P. M.      | Size of Flexible Shaft                     | Shipping Weight | Extra Attachments Fitting This Machine                                                                 |
|-------|-----------------------------------|-------------------------|----------------------|--------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------|
| 1½    | 220 or 440<br>60 Cycle<br>3 Phase | 8 x 1½ x ¾              | 1200<br>2400<br>2700 | Core<br>¾" x 7"<br>Casing<br>1 9/16" O. D. | 275 Lbs.        | M-L-V-J-H-K-I-O1-P1-G-Y-Q1-R1-P-S1-N-X-W-T1-Z-U-C-H1-E1-G1-W1-B-A-Y1-K1-A2-X1-X2<br>See Pages 50 to 57 |

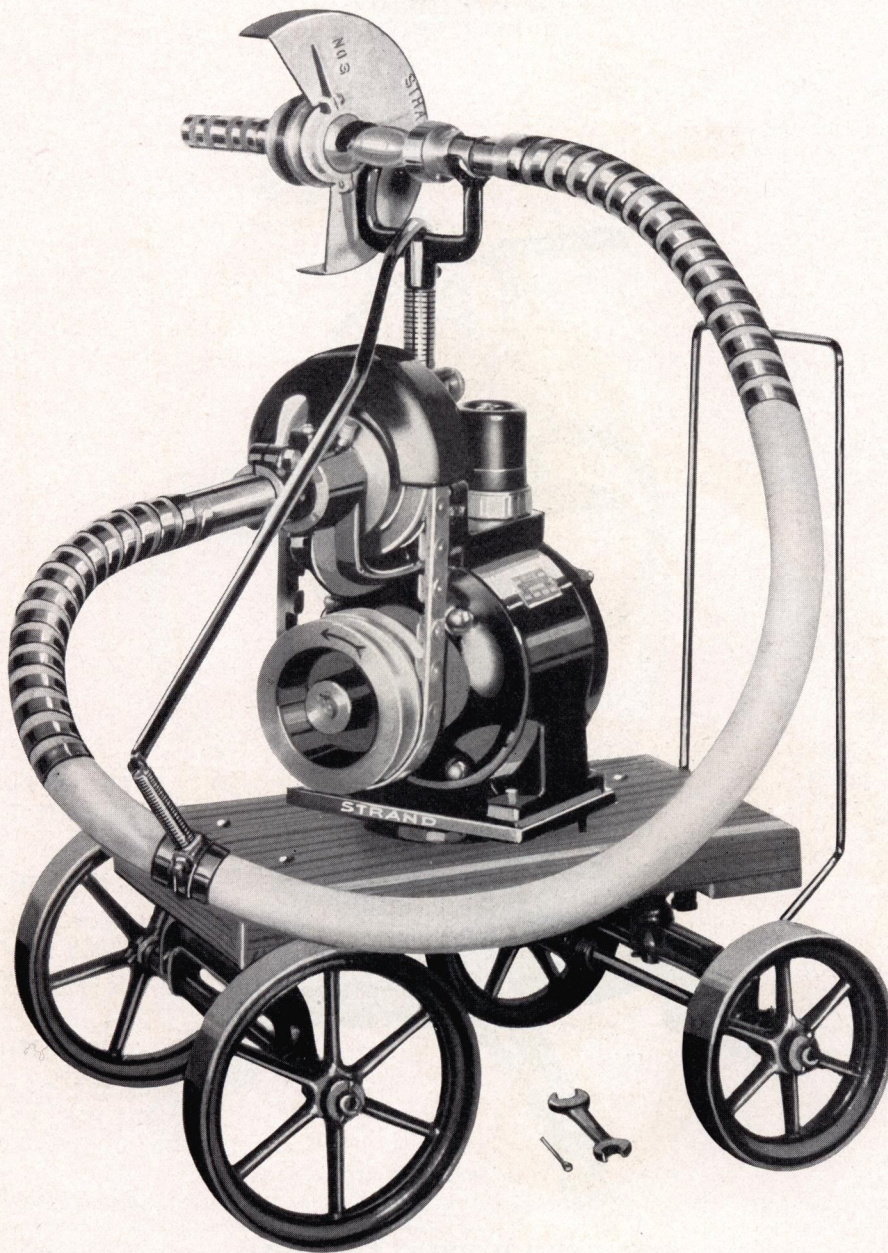
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## TYPE M8



### NOTE

This machine also furnished with direct current motor with starting box at additional price.

### STANDARD EQUIPMENT FURNISHED

2 H.P. motor, mounted on 4-wheel truck and swivel base plate, two-speed ball bearing countershaft, No. 8 x 7' flexible shaft, vulcanized covering, ball bearing spindle, wheel guard, detachable handle, switch, wiring, 2 belts, wrenches and shaft support.

See Code Page 62

### SPECIFICATIONS

| H. P. | Standard Rating                   | Grinding Wheel Capacity | Speeds R. P. M. | Size of Flexible Shaft                      | Shipping Weight | Extra Attachments Fitting This Machine                                      |
|-------|-----------------------------------|-------------------------|-----------------|---------------------------------------------|-----------------|-----------------------------------------------------------------------------|
| 2     | 220 or 440<br>60 Cycle<br>3 Phase | 10 x 1½ x ¾             | 1750<br>2400    | Core<br>7/8" x 7'<br>Casing<br>1 7/8" O. D. | 325 Lbs.        | M-L-T-J-H-I-O1-P1-G-Y-Q1-P-W-H1-E1-W1-K1-G1-Y1-A2-V-X<br>See Pages 50 to 57 |

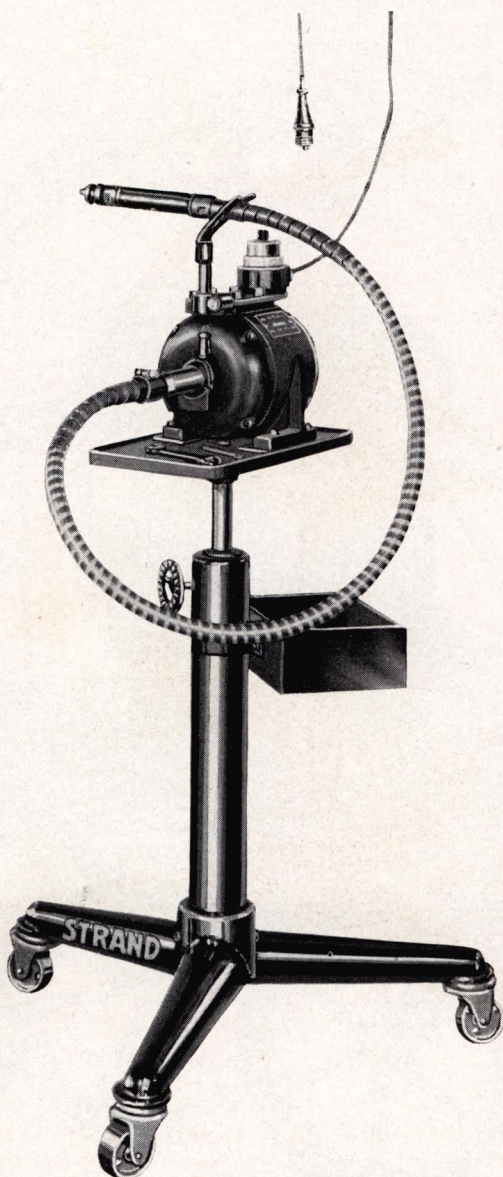
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Check carefully and specify voltage, cycle and phase desired.





# TYPE No. 4—No. 5 DIRECT DRIVE



## EXTRA ATTACHMENTS FITTING THESE MACHINES

### No. 4 Machine

A1-F-T-J-M1-N1-H-K-  
O1-G-Y-P-N-W-Z-U-  
E1-F1-W1-V

### No. 5 Machine

A1-F-M-L-D1-S1-N-W-T1-  
E-Z-U-E1-F1-W1-B-A-  
Z1-J1-L1-L2-B2-H

See Pages 50 to 57

## STANDARD EQUIPMENT FURNISHED

Motor mounted on portable and adjustable tripod stand, with swivel base, flexible shaft 5 feet long, ball bearing spindle, tool box, spindle holder, direct motor coupling, switch, wiring, cord, plug and wrenches. No. 4 machine has metal casing. No. 5 machine has vulcanized covered casing.

See Code Page 62

## SPECIFICATIONS

| Machine No.       | H. P.         | Standard Rating                                       | Grinding Wheel Capacity                   | Speeds R. P. M.    | Size of Flexible Shaft                                             | Shipping Weight | Height from Floor to Base Plate       |
|-------------------|---------------|-------------------------------------------------------|-------------------------------------------|--------------------|--------------------------------------------------------------------|-----------------|---------------------------------------|
| 4<br>Direct Drive | $\frac{1}{4}$ | 110 or 220<br>60 Cy. 1 Phase<br>or<br>110 or 220 D.C. | $4 \times \frac{3}{8} \times \frac{3}{8}$ | 1725<br>or<br>3400 | Core<br>$\frac{5}{16}$ " x 5'<br>Casing<br>$\frac{5}{8}$ " O. D.   | 140 Lbs.        | Highest Point 36"<br>Lowest Point 27" |
| 5<br>Direct Drive | $\frac{1}{3}$ | 110 or 220<br>60 Cy. 1 Phase<br>or<br>110 or 220 D.C. | $5 \times \frac{3}{4} \times \frac{3}{8}$ | 1725<br>or<br>3400 | Core<br>$\frac{7}{16}$ " x 5'<br>Casing<br>$1\frac{1}{16}$ " O. D. | 153 Lbs.        | Highest Point 36"<br>Lowest Point 27" |

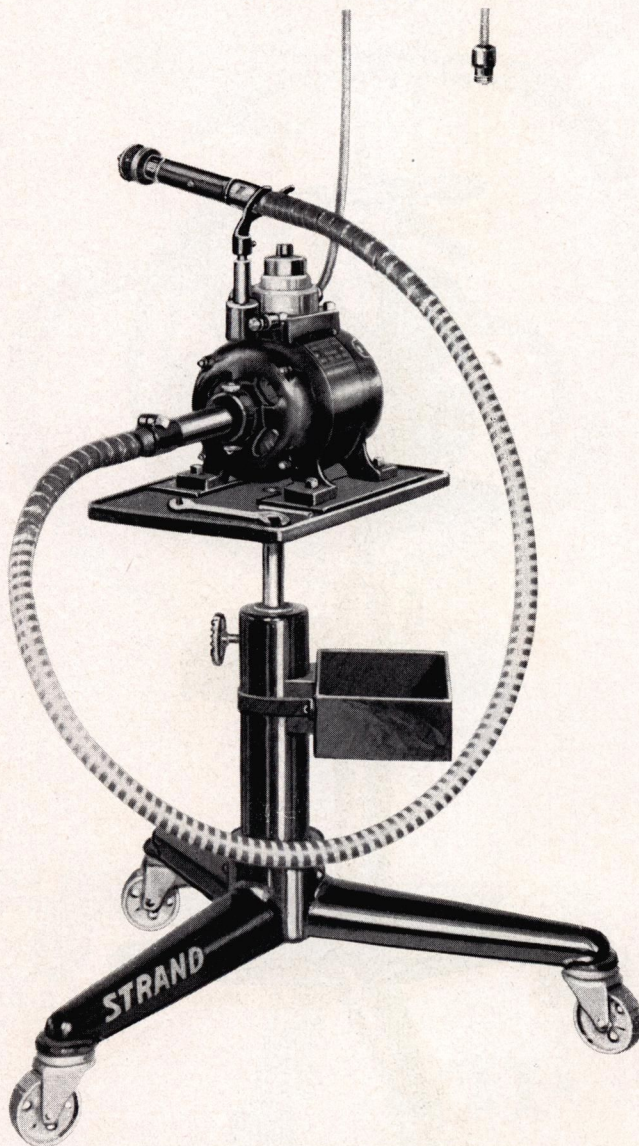
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





# TYPE No. 6—No. 6A—No. 7 DIRECT DRIVE



## EXTRA ATTACHMENTS FITTING THESE MACHINES

### No. 6 Machine

F-M-L-V-J-N1-H-K-I-O1-P1-  
G-Y-Q1-R1-P-S1-N-X-W-T1-  
E-Z-U-C-E1-F1-G1-W1-B-A-  
Y1-Z1-J1-K1-A2-B2-X1-X2

### No. 6A Machine

F-M-L-V-J-N1-H-K-I-O1-P1-  
G-Y-Q1-R1-P-S1-N-X-W-T1-  
E-Z-U-C-E1-F1-G1-W1-B-A-  
Y1-Z1-J1-K1-A2-B2-X1-X2

### No. 7 Machine

F-M-L-V-J-H-K-I-O1-P1-G-  
Y-Q1-R1-P-S1-X-W-T1-E-Z-  
U-C-E1-G1-W1-B-A-Y1-K1-  
A2-X1-X2

See Pages 50 to 57

## STANDARD EQUIPMENT FURNISHED

Motor mounted on portable and adjustable tripod stand, with swivel base, flexible shaft, vulcanized covering, ball bearing spindle, tool box, spindle holder, direct motor coupling, switch, wiring cord and plug with No. 6-6A machines, wire leads with No. 7 machine, wrenches.

See Code Page 62

## SPECIFICATIONS

| Machine No.        | H. P. | Standard Rating                                              | Grinding Wheel Capacity | Speeds R. P. M.    | Size of Flexible Shaft                       | Shipping Weight | Height from Floor to Base Plate             |
|--------------------|-------|--------------------------------------------------------------|-------------------------|--------------------|----------------------------------------------|-----------------|---------------------------------------------|
| 6<br>Direct Drive  | 1/2   | 110 or 220<br>60 Cycle<br>1-2-3 Phase or<br>110 or 220 D. C. | 6 x 3/4 x 1/2           | 1725<br>or<br>3400 | Core<br>1/2" x 6'<br>Casing<br>1 1/8" O. D.  | 210 lbs.        | Highest Point<br>31"<br>Lowest Point<br>23" |
| 6A<br>Direct Drive | 3/4   | 220<br>60 Cycle<br>3 Phase                                   | 6 x 1 x 1/2             | 1725<br>or<br>3400 | Core<br>9/16" x 6'<br>Casing<br>1 1/8" O. D. | 225 lbs.        | Highest Point<br>31"<br>Lowest Point<br>23" |
| 7<br>Direct Drive  | 1     | 220 or 440<br>60 Cycle<br>3 Phase                            | 8 x 1 x 3/4             | 1725<br>or<br>3400 | Core<br>5/8" x 7'<br>Casing<br>1 7/8" O. D.  | 250 lbs.        | Highest Point<br>31"<br>Lowest Point<br>23" |

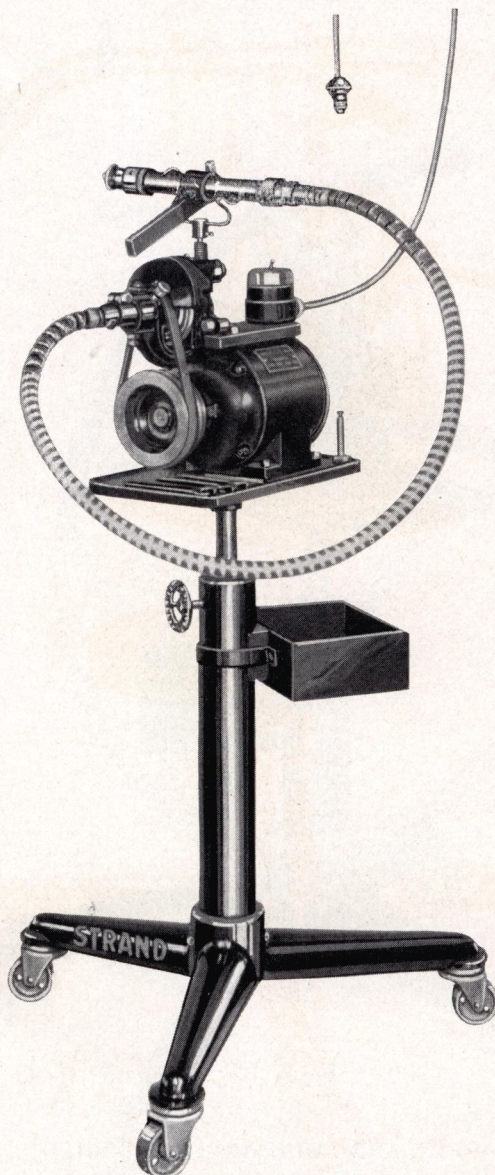
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## TYPE ML5



### EXTRA ATTACHMENTS FITTING THIS MACHINE

A1-C1-F-M-L-D1-V-J-M1-N1-  
H-K-I-O1-G-Y-P-S1-N-W-T1-  
E-Z-U-E1-F1-W1-Z1-J1-L1-  
L2-B2

See Pages 50 to 57

### STANDARD EQUIPMENT FURNISHED

$\frac{1}{3}$  H. P. motor, mounted on portable tripod stand, swivel and adjustable base, No. 5 x 5' flexible shaft, vulcanized covering, three-speed ball bearing countershaft, spindle holder, tool box, tool post grinding attachment, internal grinding spindle, 2 belts, switch, wiring, cord, plug, and wrenches.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating                                             | Grinding Wheel Capacity                                                                    | Speeds R. P. M.      | Size of Flexible Shaft                                            | Tool Post Shank   | Shipping Weight |
|---------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------|-------------------|-----------------|
| $\frac{1}{3}$ | 110 or 220<br>60 Cycle<br>1 Phase or<br>110 or 220<br>D. C. | 5 x $\frac{1}{2}$ x $\frac{3}{8}$<br>and<br>$1\frac{1}{4}$ x $\frac{1}{4}$ x $\frac{1}{4}$ | 3300<br>4300<br>5000 | Core<br>$\frac{7}{16}$ " x 5'<br>Casing<br>$1\frac{1}{8}$ " O. D. | $\frac{1}{2}$ x 1 | 125 Lbs.        |

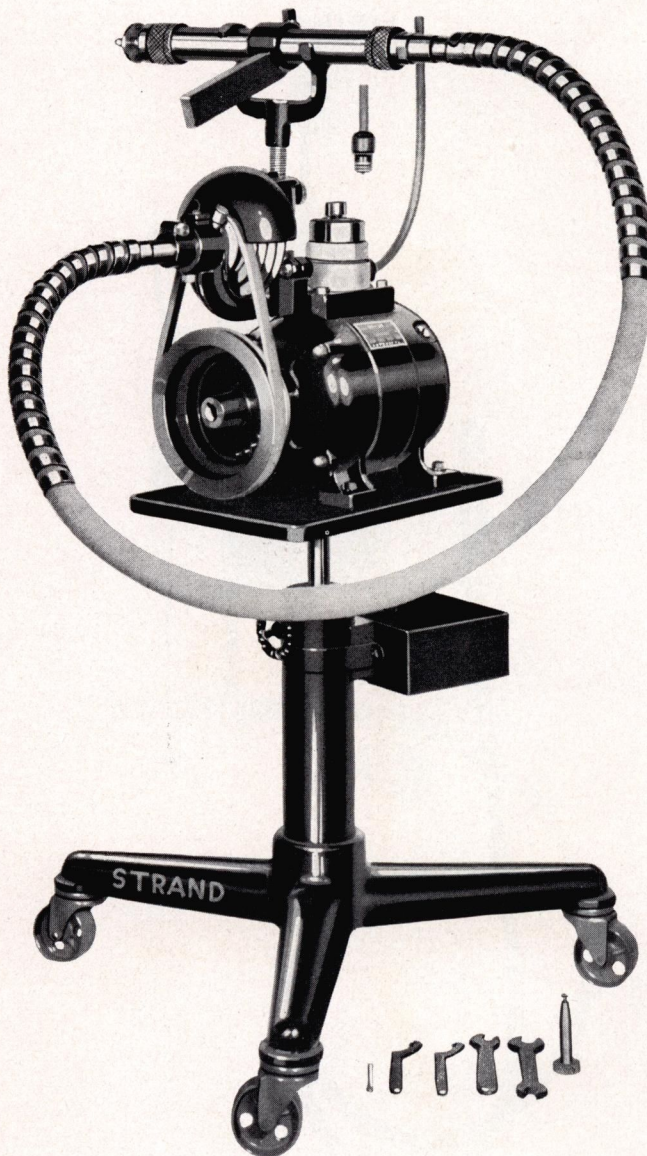
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## TYPE ML6



### EXTRA ATTACHMENTS FITTING THIS MACHINE

C1-F-M-L-V-J-N1-H-K-I-O1-  
P1-G-Y-Q1-R1-P-S1-N-X-W-  
T1-E-Z-U-C-E1-F1-G1-W1-  
Y1-Z1-J1-X1-X2-K1-A2-B2

See Pages 50 to 57

### STANDARD EQUIPMENT FURNISHED

$\frac{3}{4}$  H. P. motor, mounted on portable tripod stand, swivel and adjustable base, No. 6A x 6' flexible shaft, vulcanized covering, three-speed ball bearing countershaft, spindle holder, tool box, tool post grinding attachment, internal grinding spindle, 2 belts, switch, wiring, cord, plug, and wrenches.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating            | Grinding Wheel Capacity                                                       | Speeds R. P. M.      | Size of Flexible Shaft                                              | Tool Post Shank                 | Shipping Weight |
|---------------|----------------------------|-------------------------------------------------------------------------------|----------------------|---------------------------------------------------------------------|---------------------------------|-----------------|
| $\frac{3}{4}$ | 220<br>60 Cycle<br>3 Phase | 6 x $\frac{3}{4}$ x $\frac{1}{2}$<br>and<br>1 x $\frac{1}{4}$ x $\frac{1}{4}$ | 2200<br>3000<br>4500 | Core<br>$\frac{9}{16}$ " x 6'<br>Casing<br>1 $\frac{5}{16}$ " O. D. | $\frac{5}{8}$ x 1 $\frac{1}{2}$ | 225 Lbs.        |

Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

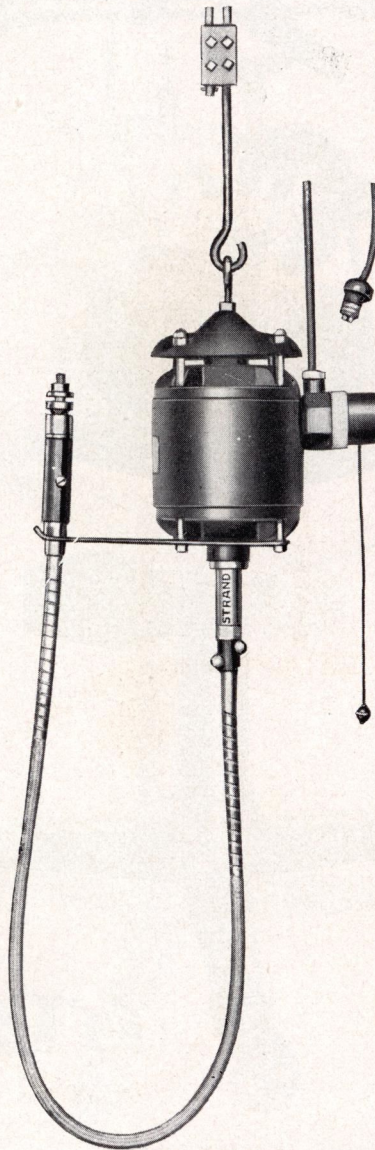
Check carefully and specify voltage, cycle and phase desired.





## TYPE V4—V5

### VERTICAL



#### STANDARD EQUIPMENT FURNISHED

Ball bearing motor, mounted with ring and adjustable tie rods, flexible shaft, direct connected, ball bearing hand spindle, spindle holder, pull switch, cord and plug. No. 4 machine has metal casing. No. 5 machine has vulcanized covering.

See Code Page 62

#### SPECIFICATIONS

| Type | H. P.         | Standard Rating                                         | Size Flexible Shaft                                               | Speeds R. P. M.    | Grinding Wheel Capacity | Shipping Weight | Extra Attachments Fitting These Machines                                                                              |
|------|---------------|---------------------------------------------------------|-------------------------------------------------------------------|--------------------|-------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------|
| V4   | $\frac{1}{4}$ | 110 or 220<br>60 Cy. 1 Ph.<br>or<br>110 or 220<br>D. C. | Core<br>$\frac{5}{16}$ " x 5'<br>Casing<br>$\frac{5}{8}$ " O. D.  | 1725<br>or<br>3400 | 4 x $\frac{3}{8}$       | 50 Lbs.         | A1-F-M-L-T-J-M1-N1-H-<br>K-O1-G-Y-P-N-W-Z-<br>U-E1-F1-W1<br>See Pages 50 to 57                                        |
| V5   | $\frac{1}{3}$ | 110 or 220<br>60 Cy. 1 Ph.<br>or<br>110 or 220<br>D. C. | Core<br>$\frac{7}{16}$ " x 5'<br>Casing<br>$1\frac{1}{8}$ " O. D. | 1725<br>or<br>3400 | 5 x $\frac{3}{4}$       | 60 Lbs.         | A1-F-M-L-D1-V-J-M1-N1-<br>H-K-I-O1-G-Y-R1-P-S1-<br>N-W-T1-E-Z-U-E1-F1-<br>W1-B-A-Z1-J1-L1-L2-B2<br>See Pages 50 to 57 |

Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

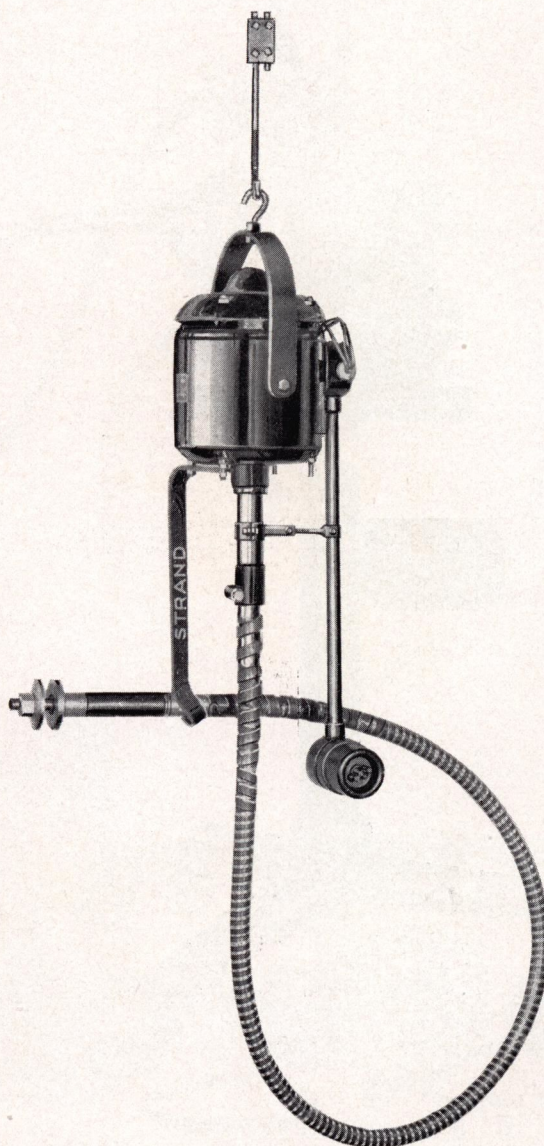
Check carefully and specify voltage, cycle and phase desired.





## TYPE V6—V6A—V7—V7A—V8

### VERTICAL



#### EXTRA ATTACHMENTS FITTING THESE MACHINES

##### V6—V6A Machines

F-M-L-V-J-NI-H-K-I-O1-  
P1-G-Y-Q1-R1-P-S1-N-X-  
W-T1-E-Z-U-C-E1-  
F1-G1-W1-A-B-Y1-Z1-  
J1-X1-X2-K1-A2-B2

##### V7—V7A Machines

F-M-L-V-J-H-K-I-O1-P1-  
G-Y-Q1-R1-P-S1-X-W-  
T1-E-Z-U-C-E1-G1-W1-  
B-A-Y1-K1-A2-X1-X2

##### V8 Machine

F-M-L-J-H-I-O1-P1-Q1-  
R1-P-X-W-E-H1-E1-G1-  
W1-Y1-K1-A2

See Pages 50 to 57

#### STANDARD EQUIPMENT FURNISHED

Ball Bearing Motor  
Mounted in Swivel Bale  
and Ring

Adjustable Tie Rods

Flexible Shaft with  
Vulcanized Covering  
Direct Connected

Ball Bearing  
Hand Spindle

Remote Control Switch  
Wiring and  
Spindle Holder

Motors of voltages, cycles or  
phases other than those speci-  
fied below as standard, are  
subject to special prices.

See Code Page 62

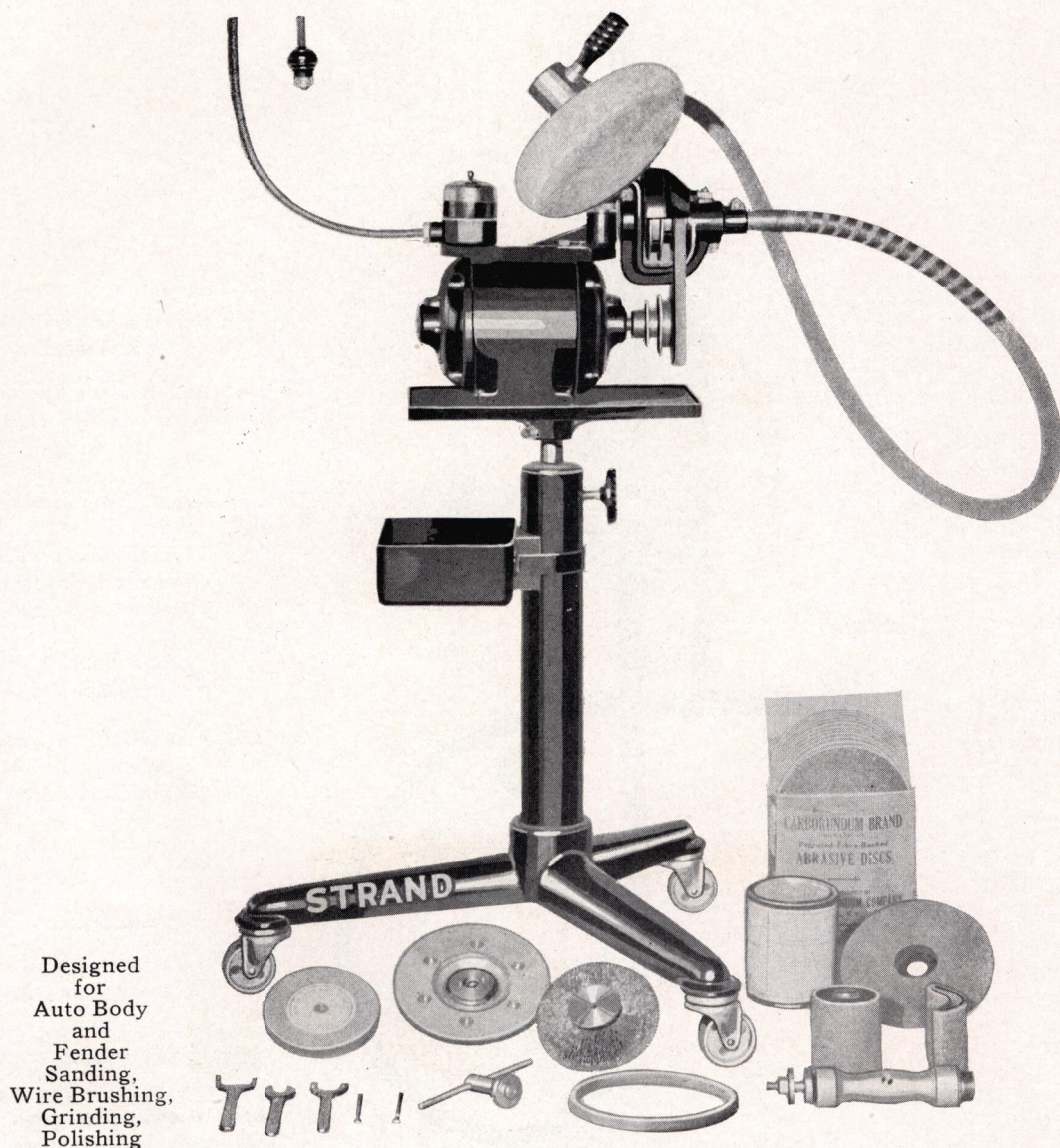
#### SPECIFICATIONS

| Type | H. P. | Standard<br>Rating                                      | Size<br>Flexible<br>Shaft                   | Speeds<br>R. P. M. | Grinding<br>Wheel<br>Capacity | Shipping<br>Weight | Extra Attachments<br>Fitting These Machines |
|------|-------|---------------------------------------------------------|---------------------------------------------|--------------------|-------------------------------|--------------------|---------------------------------------------|
| V6   | 1/2   | 110 or 220<br>60 Cy. 1-2-3 Ph.<br>or<br>110 or 220 D.C. | Core<br>1/2" x 6'<br>Casing<br>1 5/8" O. D. | 1725<br>or<br>3400 | 6 x 3/4                       | 100 Lbs.           | See Pages 50 to 57                          |
| V6A  | 3/4   | 220<br>60 Cycle<br>3 Phase                              | Core<br>5/8" x 6'<br>Casing<br>1 7/8" O. D. | 1725<br>or<br>3400 | 6 x 1                         | 110 Lbs.           | See Pages 50 to 57                          |
| V7   | 1     | 220<br>60 Cycle<br>3 Phase                              | Core<br>5/8" x 7'<br>Casing<br>1 7/8" O. D. | 1725<br>or<br>3400 | 8 x 1                         | 115 Lbs.           | See Pages 50 to 57                          |
| V7A  | 1 1/2 | 220<br>60 Cycle<br>3 Phase                              | Core<br>3/4" x 7'<br>Casing<br>1 7/8" O. D. | 1725<br>or<br>3400 | 8 x 1 1/2                     | 135 Lbs.           | See Pages 50 to 57                          |
| V8   | 2     | 220<br>60 Cycle<br>3 Phase                              | Core<br>7/8" x 7'<br>Casing<br>1 7/8" O. D. | 1725<br>or<br>3400 | 10 x 1 1/2                    | 150 Lbs.           | See Pages 50 to 57                          |





## TYPE AB-M5



Designed for  
Auto Body  
and  
Fender  
Sanding,  
Wire Brushing,  
Grinding,  
Polishing

### STANDARD EQUIPMENT FURNISHED

$\frac{1}{3}$  H. P. ball bearing motor, three-speed ball bearing countershaft, tripod stand with swiveling base plate, tool box, 6 ft. flexible shaft with vulcanized covering, ball bearing hand spindle, ball bearing right angle attachment L1, 7" patented flexible sanding disc, 12 assorted circles, 7" rubbing felt, 9" lamb's wool polishing pad, 3 x 3 cylindrical sanding drum, 5" wire brush, 5 x  $\frac{3}{4}$  grinding wheel, 3 assorted bands, 1 qt. can polishing compound, wrenches, switch, cord and plug, 1 extra vulcanized belt.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating                                      | Speeds R. P. M.     | Size Flexible Shaft                                         | Size Grinding Wheel               | Size Sanding Pad | Size Rubbing Felt | Size Polishing Pad | Size Wire Brush | Size Rubber Drum | Height                          | Floor Space | Weights                           |
|---------------|------------------------------------------------------|---------------------|-------------------------------------------------------------|-----------------------------------|------------------|-------------------|--------------------|-----------------|------------------|---------------------------------|-------------|-----------------------------------|
| $\frac{1}{3}$ | 60 Cy. Sgl. Ph.<br>110 or 220<br>or 110 or 220 D. C. | 900<br>1800<br>3600 | Core $\frac{7}{16}$ " x 6'<br>Casing $1\frac{1}{8}$ " O. D. | 5 x $\frac{3}{4}$ x $\frac{3}{8}$ | 7" Diam.         | 7" Diam.          | 9" Diam.           | 5 x 1           | 3 x 3            | Low Point 27"<br>High Point 36" | 27" x 27"   | Net 125 lbs.<br>Shipping 195 lbs. |

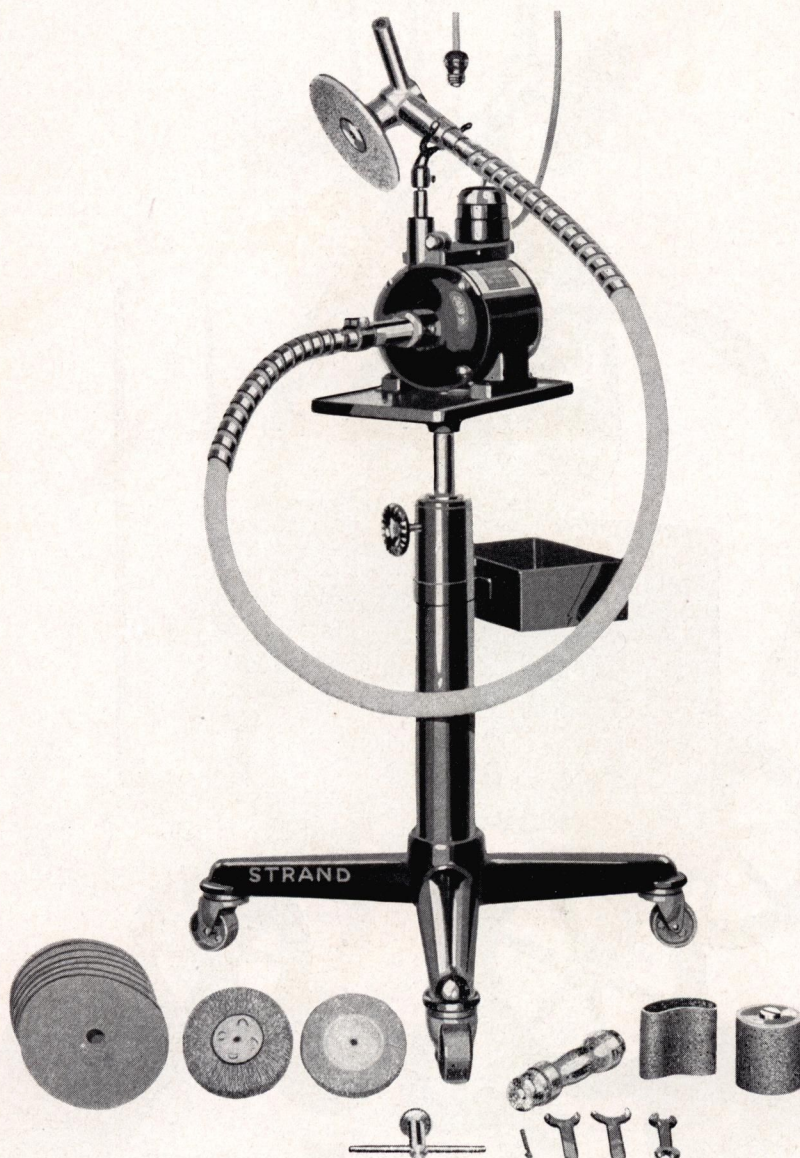
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## TYPE AB-D5



Designed  
and  
Equipped  
for  
Auto Body  
and  
Fender  
Sanding,  
Wire Brushing,  
Grinding

### STANDARD EQUIPMENT FURNISHED

$\frac{1}{3}$  H. P. ball bearing motor, 3400 R.P.M., mounted on tripod stand with swivel base, flexible shaft No. 5 x 6 ft., vulcanized covering, direct connected to motor shaft, ball bearing L1 7" right angle disc sanding attachment, ball bearing hand spindle, 3 x 3 rubber sanding drum, 5 x  $\frac{3}{4}$  grinding wheel, 5 x 1 wire brush, 12 assorted sanding discs, 7" diameter, switch, wiring, cord, plug, spindle holder, tool box, wrenches.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating                                     | Speed            | Size Flexible Shaft                                                | Size Grinding Wheel               | Size Sanding Pad | Size Wire Brush   | Size Rubber Drum | Floor Space | Height                                      | Shipping Weight |
|---------------|-----------------------------------------------------|------------------|--------------------------------------------------------------------|-----------------------------------|------------------|-------------------|------------------|-------------|---------------------------------------------|-----------------|
| $\frac{1}{3}$ | 110 or 220<br>60 Cy. 1 Ph.<br>or<br>110 or 220 D.C. | 3400<br>R. P. M. | Core<br>$\frac{7}{16}$ " x 6'<br>Casing<br>$1\frac{1}{16}$ " O. D. | 5 x $\frac{3}{4}$ x $\frac{3}{8}$ | 7"<br>Diam.      | 5 x $\frac{3}{4}$ | 3 x 3            | 27" x 27"   | Low<br>Point<br>27"<br>High<br>Point<br>36" | 175 Lbs.        |

Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

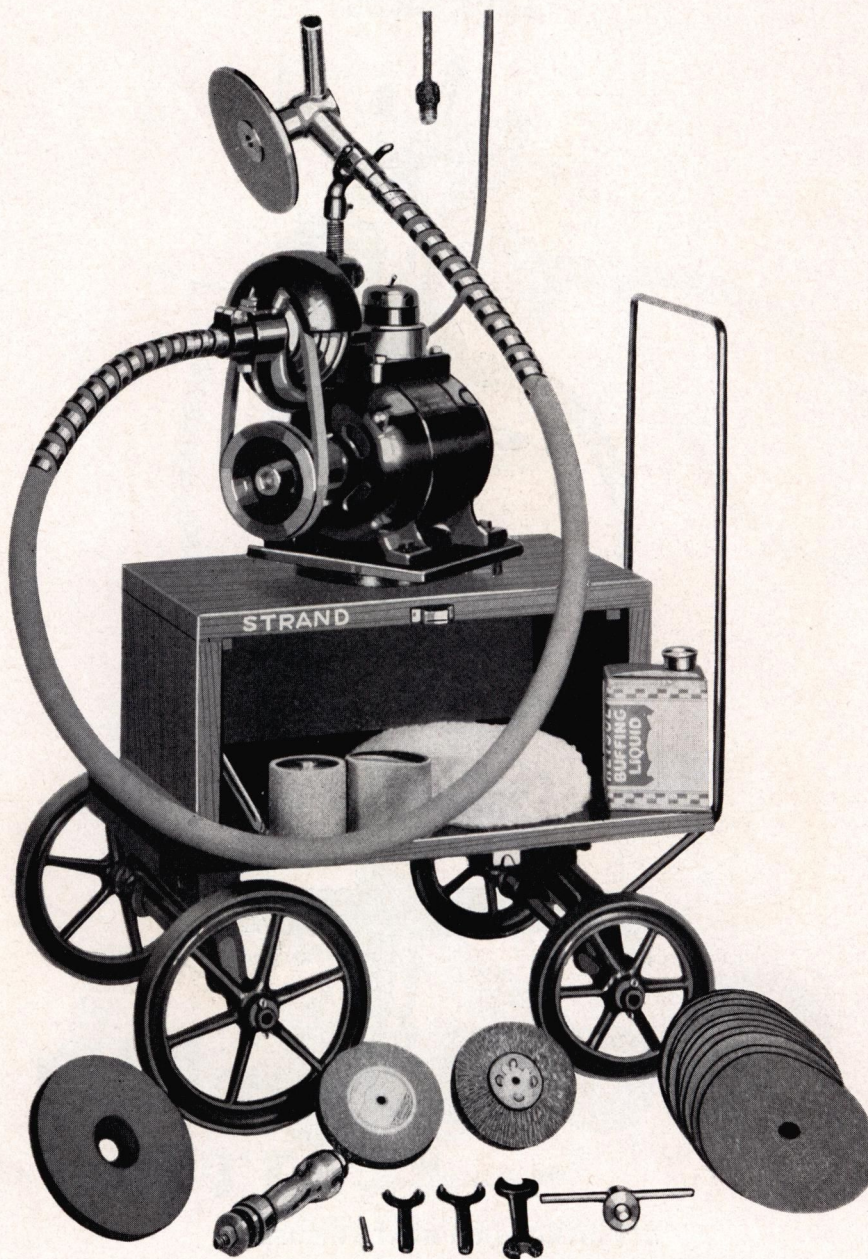
Check carefully and specify voltage, cycle and phase desired.





## TYPE AB-T6

Designed  
and  
Equipped  
for  
Auto Body  
and  
Fender  
Sanding,  
Wire Brushing,  
Grinding,  
Polishing



Three-speed  
Ball Bearing  
Countershaft  
Drive

### STANDARD EQUIPMENT FURNISHED

$\frac{1}{2}$  H. P. motor, mounted on four wheel truck, with swivel base plate, three-speed ball bearing countershaft, flexible shaft No. 6 x 6 ft., vulcanized covering, ball bearing hand spindle, spindle holder, ball bearing right angle sanding attachment X1, 8" sanding pad, 12 assorted sanding discs, felt rubbing pad, 10" lambs wool polishing pad, 1 can liquid polish, 3 x 3 rubber sanding drum, 6 x  $\frac{3}{4}$  grinding wheel, 6 x 1 wire brush, switch, wiring, cord, plug, 2 belts, wrenches.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating                                                  | Speeds R. P. M.      | Size Flexible Shaft                                              | Size Grinding Wheel               | Size Rubber Drum | Size Sanding Disc | Size Wire Brush          | Size Rubbing Pad | Size Lambs Wool Pad | Shipping Weight |
|---------------|------------------------------------------------------------------|----------------------|------------------------------------------------------------------|-----------------------------------|------------------|-------------------|--------------------------|------------------|---------------------|-----------------|
| $\frac{1}{2}$ | 110 or 220<br>60 Cycle<br>1, 2 or 3 Ph.<br>or<br>110 or 220 D.C. | 1000<br>1800<br>3200 | Core<br>$\frac{1}{2}$ " x 6'<br>Casing<br>$1\frac{1}{8}$ " O. D. | 6 x $\frac{3}{4}$ x $\frac{1}{2}$ | 3 x 3            | 8" Diam.          | 6 x 1<br>x $\frac{1}{2}$ | 8" Diam.         | 10" Diam.           | 275 Lbs.        |

Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## TYPE AB-D6

Designed  
and  
Equipped  
for  
Auto Body  
and  
Fender  
Sanding,  
Wire Brushing,  
Grinding



Direct Drive  
from  
Motor Shaft

### STANDARD EQUIPMENT FURNISHED

$\frac{1}{2}$  H. P. motor, mounted on four wheel truck with swivel base plate and tool box, No. 6 x 6' flexible shaft, vulcanized covering, direct connected, ball bearing hand spindle, spindle holder, ball bearing right angle sanding attachment X1, 8" sanding pad, 12 8" assorted sanding discs, 3 x 3 rubber sanding drum, 6 x  $\frac{3}{4}$ " grinding wheel, 6 x 1" wire brush, switch, wiring, cord, plug, wrenches.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating                                                  | Speed R. P. M. | Size Flexible Shaft                                               | Size Grinding Wheel                       | Size Rubber Drum | Size Sanding Pad | Size Wire Brush                 | Shipping Weight |
|---------------|------------------------------------------------------------------|----------------|-------------------------------------------------------------------|-------------------------------------------|------------------|------------------|---------------------------------|-----------------|
| $\frac{1}{2}$ | 110 or 220<br>60 Cycle<br>1, 2 or 3 Ph.<br>or<br>110 or 220 D.C. | 3400           | Core<br>$\frac{1}{2}$ " x 6'<br>Casing<br>$1\frac{5}{16}$ " O. D. | $6 \times \frac{3}{4} \times \frac{1}{2}$ | 3 x 3            | 8"<br>Diam.      | $6 \times 1 \times \frac{1}{2}$ | 250 Lbs.        |

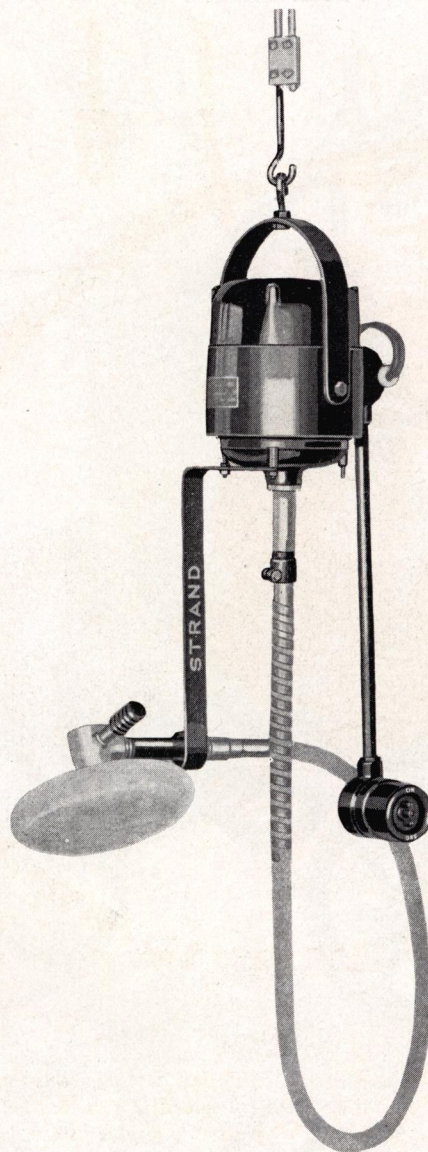
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## TYPE AB-V6



Standard Speed  
of Motor  
3400 R.P.M.

Right Angle  
Attachments  
Are Made in  
One to One  
or  
Two to One  
Ratio

In Ordering  
Specify  
Ratio Desired

AIR JACKETED MOTOR

For  
Sanding Operation  
Specify  
X1 Right Angle  
Attachment

For  
Lambs Wool  
Polishing  
Specify  
X2 Right Angle  
Attachment

NOTE—Only one Right Angle Attachment included with Standard Equipment.

### STANDARD EQUIPMENT FURNISHED

$\frac{1}{2}$  H. P. motor, vertical type ball bearing, mounted in swiveling bale with ring for suspending, adjustable tie rods, No. 6 x 6' flexible shaft, vulcanized covering, direct connected to motor shaft, X1-8" right angle sanding attachment, 12 assorted 8" sanding discs or X2 right angle attachment, 8" felt pad, 10" lambs wool pad, wiring, remote switch control, spindle holder, wrenches.

See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating                                                          | Speeds R. P. M. | Size Flexible Shaft                                                            | Size Sanding Pad | Size Felt Pad | Size Lambs Wool Pad | Shipping Weight |
|---------------|--------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------|------------------|---------------|---------------------|-----------------|
| $\frac{1}{2}$ | 110, 220 or 440<br>60 Cycle<br>1, 2 or 3 Phase<br>or<br>110 or 220 D. C. | 3400            | (Special)<br>Core<br>$\frac{1}{2}$ " x 6'<br>Casing<br>$1\frac{1}{16}$ " O. D. | 8"<br>Diam.      | 8"<br>Diam.   | 10"<br>Diam.        | 150 lbs.        |

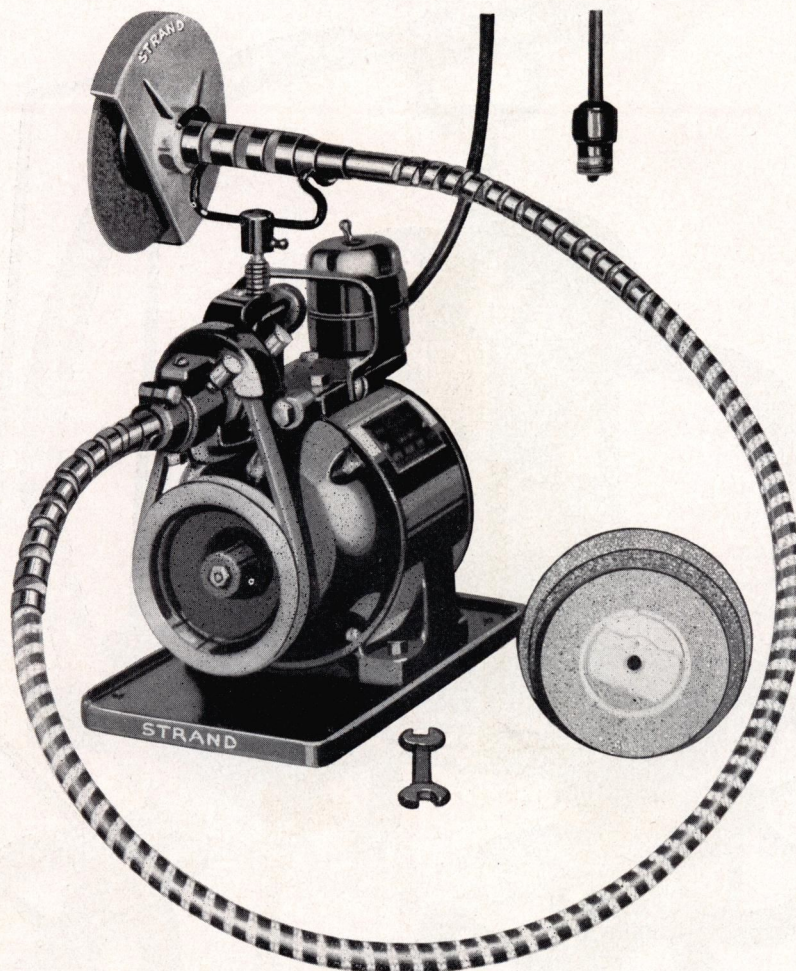
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## MILL STONE GRINDER



### NOTE

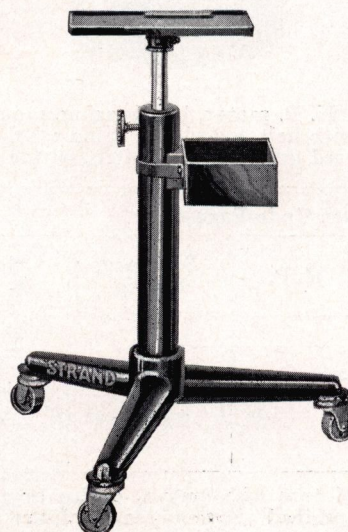
Machine Furnished  
Less Stand  
Unless Otherwise  
Specified  
See Illustration  
Below

### STANDARD EQUIPMENT FURNISHED

$\frac{1}{4}$  H. P. motor, ball bearing, mounted on cast iron base, high speed ball bearing counter-shaft, No. 4 x 5' flexible shaft, ball bearing hand spindle, 6" wheel guard, 2 thin flanges, 2 belts, 3 thin rubber bonded wheels, 1 each  $\frac{3}{32}$ ,  $\frac{1}{16}$ ,  $\frac{3}{32}$ , 1 roughing down wheel 5 x  $\frac{1}{2}$  x  $\frac{3}{8}$ , switch, wiring, cord, plug, and wrenches.

### EXTRA

Tripod Stand with Swivel and  
Adjustable Base Plate



See Code Page 62

### SPECIFICATIONS

| H. P.         | Standard Rating                                          | Speed R. P. M. | Size Flexible Shaft                                                 | Size Grinding Wheels                                                                                               | Shipping Weight |
|---------------|----------------------------------------------------------|----------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------|
| $\frac{1}{4}$ | 110 or 220<br>60 Cycle<br>1 Phase or<br>110 or 220 D. C. | 6000           | Core<br>$\frac{5}{16}$ " x 5'<br>Casing<br>$\frac{5}{8}$ "<br>O. D. | 6" Diam.<br>Thickness<br>$\frac{3}{32}$ , $\frac{1}{16}$ , $\frac{3}{32}$ and<br>5 x $\frac{1}{2}$ x $\frac{3}{8}$ | 65 Lbs.         |

Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





## TYPE SS-7

This Machine  
Is Designed  
for  
Grinding  
and  
Polishing  
of  
Stainless  
Steel

High Speed  
Machine  
2500, 3500,  
4500 R.P.M.



This Machine  
Also Furnished  
with  
Direct Current  
Motor and  
Starting Box  
at  
Additional  
Price

### STANDARD EQUIPMENT FURNISHED

1 H. P. motor, ball bearing, mounted on four wheel truck with swivel base plate, three speed ball bearing countershaft, with belt, guard and spindle holder, No. 6A x 6' flexible shaft, vulcanized covering, ball bearing hand spindle, leather covered grip, 2 belts, switch, wiring, and wrenches.

See Code Page 62

### SPECIFICATIONS

| H. P. | Standard Rating            | Speeds R. P. M.      | Size Flexible Shaft                                                | Size Grinding and Buffing Wheels                                                               | Shipping Weight | Extra Attachments Fitting No. 6A Shaft on This Machine                                                   |
|-------|----------------------------|----------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------|
| 1     | 220<br>60 Cycle<br>3 Phase | 2500<br>3500<br>4500 | Core<br>$\frac{3}{16}$ " x 6'<br>Casing<br>$1\frac{5}{16}$ " O. D. | 8 x 1 x $\frac{1}{2}$<br>Grinding Wheel<br>8 x $1\frac{1}{4}$ x $\frac{1}{2}$<br>Buffing Wheel | 275<br>Lbs.     | F-M-L-V-J-H-K-I-O1-P1-<br>G-Y-Q1-R1-P-X-W-E-G1-<br>W1-B-A-Y1-J1-X1-X2-<br>K1-A2-B2<br>See Pages 50 to 57 |

Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.



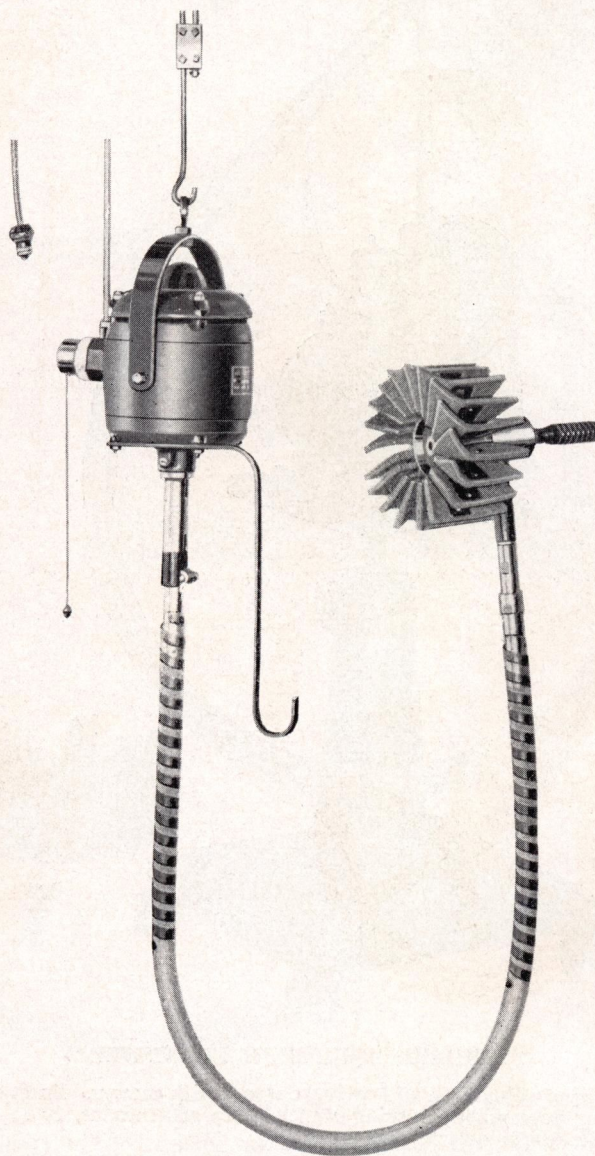


**TYPE FR-V6**  
**WOOD FILLER RUBBING MACHINE**  
**VERTICAL TYPE**

This Machine is designed for rubbing in of wood fillers on flat surfaces. The Soft Felt Rubbing Pads operating in a vertical position on the work at approximately 425 surface ft. per minute serve to rub the filler in the panels thoroughly, practically eliminating pin hole effect, and leaving a very evenly filled surface for the finishing coats.

**NOTE**

Not recommended for work with mouldings or projections that will interfere with the full sweep of the rubbing wheel.



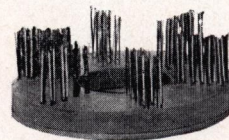
**STANDARD EQUIPMENT  
FURNISHED**

$\frac{1}{2}$  H. P. Ball Bearing Motor mounted in a Universal Swiveling Bale, suspended from Adjustable Tie Rods. 6 ft. flexible shaft with vulcanized covering, direct connected to motor shaft. Worm drive attachment — 10 to 1 reduction.

**"STRAND"**

Patented, Duplex Multipad Rubbing Wheel, Shaft Holder, Wire Cleaning Brush, Switch, Cord and Plug.

Wire Cleaning Brush for Duplex  
Multipad Wheel



See Code Page 63

**SPECIFICATIONS**

| Motor Capacity        | Standard Rating                                                               | Speed of Motor | Speed of Wheel | Flexible Shaft                                                   | Worm Drive           | Shipping Weight |
|-----------------------|-------------------------------------------------------------------------------|----------------|----------------|------------------------------------------------------------------|----------------------|-----------------|
| $\frac{1}{2}$<br>H.P. | 110 or 220<br>60 Cycle<br>1, 2 or 3 Ph.<br>or<br>110 or 220<br>Direct Current | 1725<br>R.P.M. | 172<br>R.P.M.  | Core<br>$\frac{1}{2}$ " x 6'<br>Casing O.D.<br>$1\frac{5}{16}$ " | 10 to 1<br>Reduction | 125<br>lbs.     |

Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

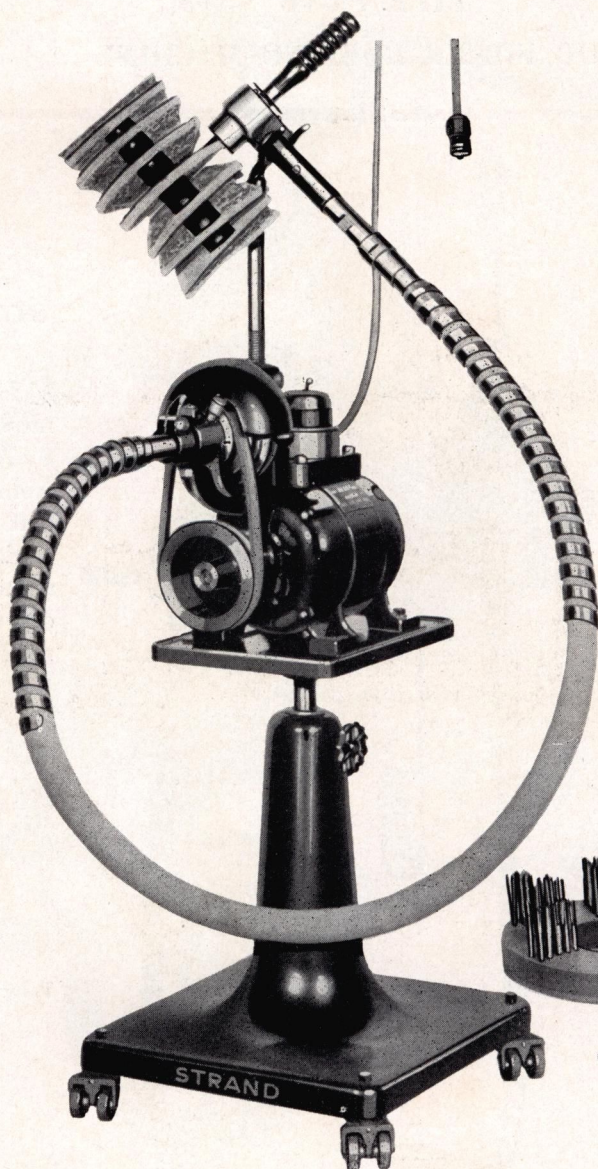
Check carefully and specify voltage, cycle and phase desired.





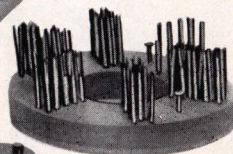
## TYPE FR-M6—FLOOR COLUMN

This Machine  
Is Equipped  
for Rubbing in  
Wood Filler  
on all  
Flat Surfaces.



Equipped with  
"Strand"  
Duplex Multipad  
Wheel  
with Rubbing  
Felt Pads

Pat. 1654275



Wire Cleaning  
Brush for Duplex  
Multipad Wheel

### STANDARD EQUIPMENT FURNISHED

$\frac{1}{2}$  H. P. motor, mounted on floor type, adjustable and swivel column with casters. Ball bearing, three-speed motor counter-shaft No. 6, flexible shaft 6 feet long, vulcanized covering, worm drive attachment, 10 to 1 reduction. "STRAND" Duplex Multipad wheel, wire cleaning brush, cord, switch, and plug.

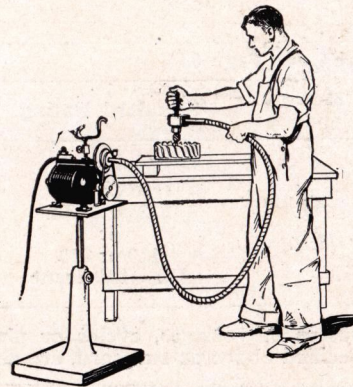
See Code Page 63

### SPECIFICATIONS

| H. P.           | Standard Rating                                                                 | Speed at Wheel                                        | Size of Flexible Shaft                                               | Duplex Multipad Wheel                                      | Height from Floor to Top of Motor                                         | Shipping Weight |
|-----------------|---------------------------------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------|-----------------|
| $\frac{1}{2}$ " | 110 or 220<br>60 Cycle<br>1, 2 or 3<br>Phase<br>110 or 220<br>Direct<br>Current | 100<br>R. P. M.<br>180<br>R. P. M.<br>320<br>R. P. M. | Core<br>$\frac{1}{2}$ " x 6"<br>O. D.<br>Casing<br>$1\frac{5}{16}$ " | Diam. 9"<br>Width $5\frac{3}{4}$ "<br>Hole $\frac{1}{2}$ " | Adjusted to<br>Lowest Point<br>30"<br>Adjusted to<br>Highest Point<br>38" | 200 lbs.        |

Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

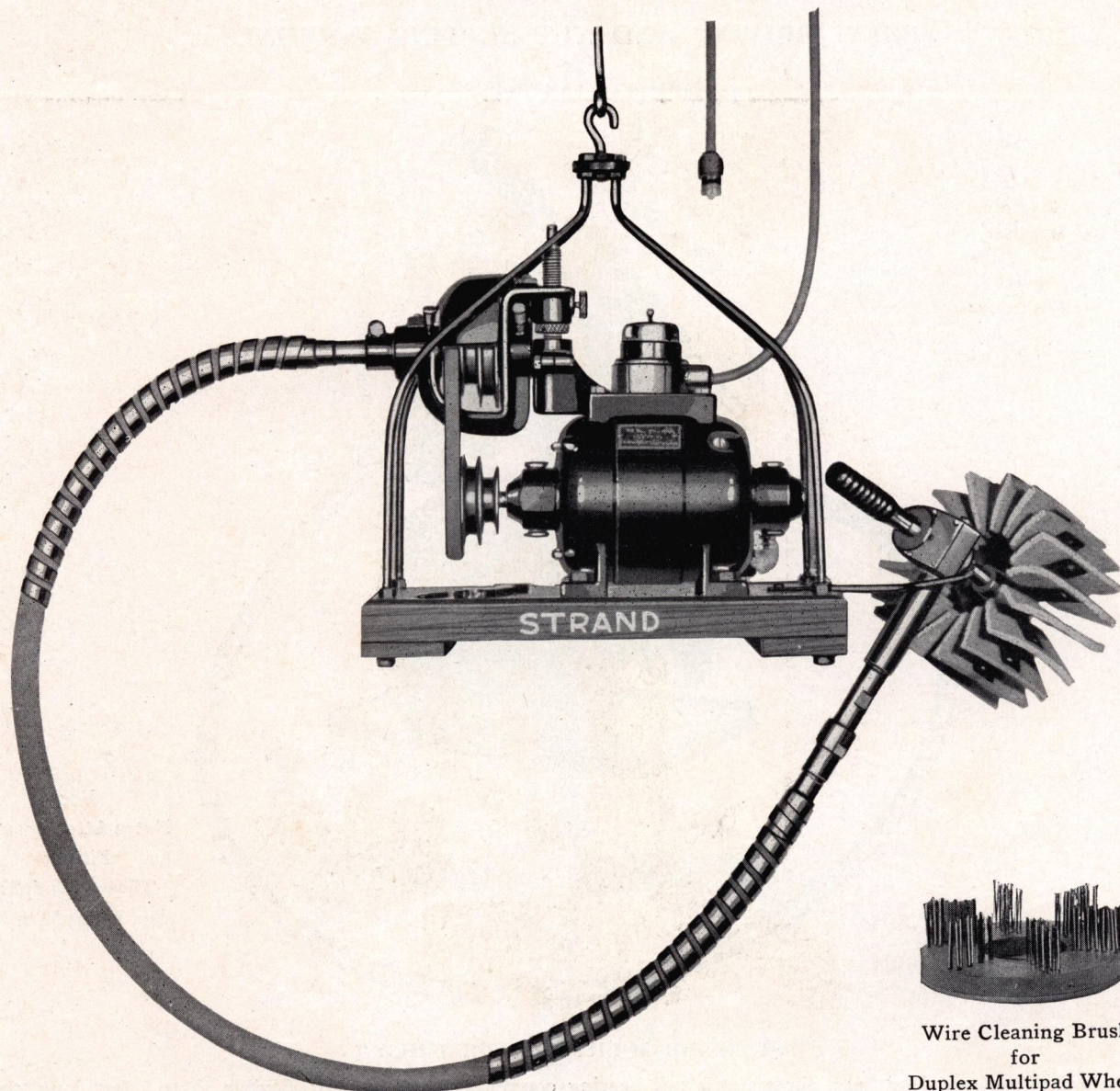
Check carefully and specify voltage, cycle and phase desired.







## TYPE FR-M6—SUSPENSION BASE



Wire Cleaning Brush  
for  
Duplex Multipad Wheel

### STANDARD EQUIPMENT FURNISHED

$\frac{1}{2}$  H. P. motor, mounted on suspension base and tie rods as illustrated, ball bearing, three-speed motor countershaft No. 6, flexible shaft 6' long, vulcanized covering, worm drive attachment, reduction 10 to 1, "STRAND" Duplex Multipad wheel, wire cleaning brush, cord, switch, and plug.

See Code Page 63

### SPECIFICATIONS

| H. P.         | Standard Rating                                                                | Speed at Wheel                               | Size of Flexible Shaft                                     | Duplex Multipad Wheel                                         | Shipping Weight |
|---------------|--------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------|-----------------|
| $\frac{1}{2}$ | 110 or 220, 60 Cycles<br>1, 2 or 3 Phase<br>or<br>110 or 220<br>Direct Current | 100 R. P. M.<br>180 R. P. M.<br>320 R. P. M. | Core $\frac{1}{2}$ " x 6'<br>O.D. Casing $1\frac{5}{16}$ " | Diameter 9"<br>Width $5\frac{3}{4}$ "<br>Hole $\frac{1}{2}$ " | 165 lbs.        |

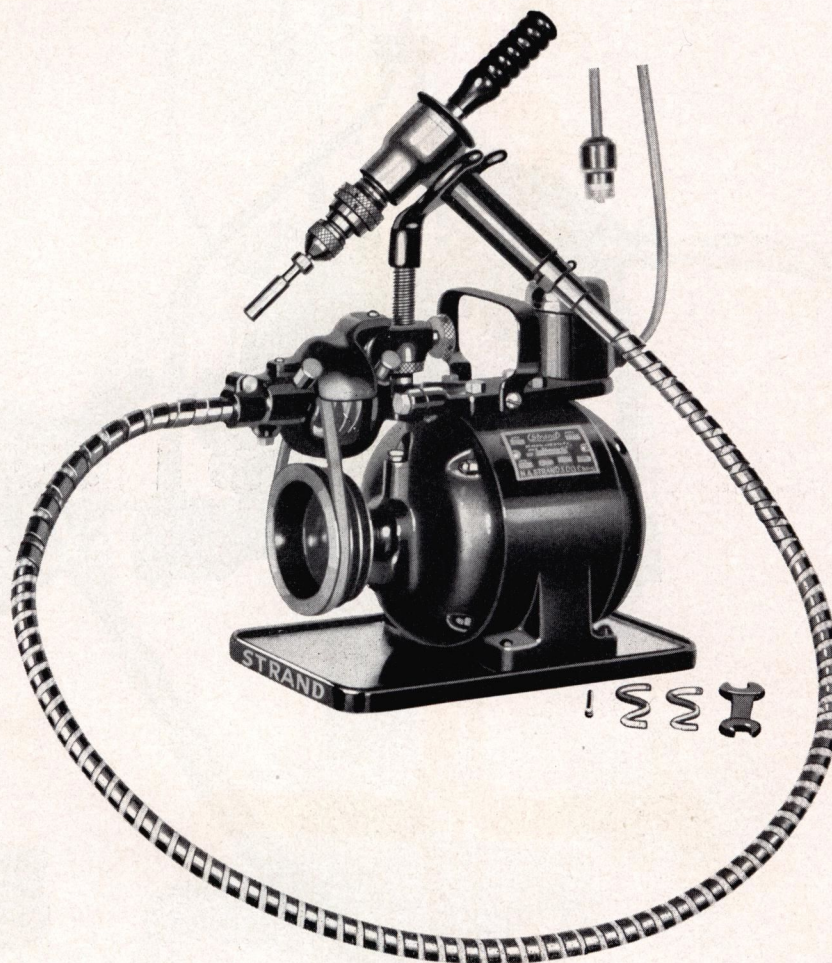
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.





No. 4—No. 5  
SCREW DRIVING AND NUT SETTING MACHINES  
HORIZONTAL TYPES



For  
Extra Attachments  
Fitting  
These Machines  
See Pages 50 to 57

STANDARD EQUIPMENT FURNISHED

Motors mounted on cast iron base, three-speed ball bearing countershaft, belt guard, flexible shaft 5 feet long, screw driving and nut setting attachment, one socket, or one screw driver and finder, spindle holder, top handle on motor, 2 belts, switch, wiring, cord, plug, wrenches. No. 4 machine has metal casing. No. 5 machine has vulcanized covering.

See Code Page 63

SPECIFICATIONS

| Machine | H. P.         | Standard Rating                                        | Speeds of Attachment       | Size of Flexible Shaft                                           | Approximate Capacities  |                                        |
|---------|---------------|--------------------------------------------------------|----------------------------|------------------------------------------------------------------|-------------------------|----------------------------------------|
| No. 4   | $\frac{1}{4}$ | 110 or 220<br>60 Cy. 1 Phase<br>or<br>110 or 220 D. C. | 170<br>300 } R.P.M.<br>520 | Core<br>$\frac{5}{16}$ " x 5'<br>Casing<br>$\frac{5}{8}$ " O. D. | Nuts<br>$\frac{1}{4}$ " | Screws<br>No. 4 to No. 10<br>Inclusive |
| No. 5   | $\frac{1}{2}$ | 110 or 220<br>60 Cy. 1 Phase<br>or<br>110 or 220 D. C. | 90<br>180 } R. P.M.<br>360 | Core<br>$\frac{7}{16}$ " x 5'<br>$1\frac{1}{16}$ " O. D.         | Nuts<br>$\frac{3}{8}$ " | Screws<br>No. 8 to No. 14<br>Inclusive |

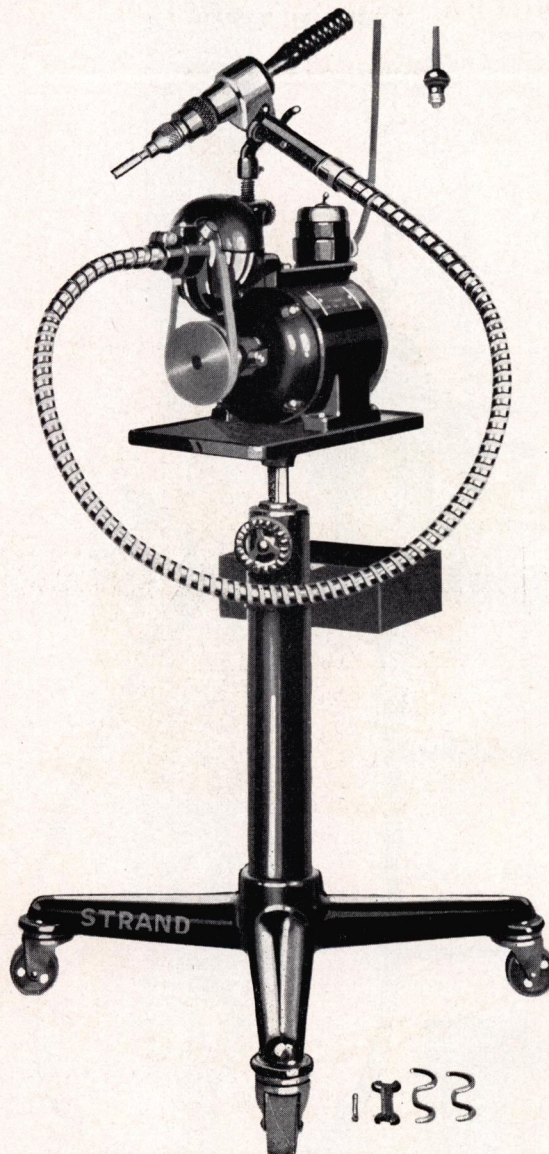
Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage,  
cycle and phase desired.





No. 6—No. 7  
**SCREW DRIVING AND NUT SETTING MACHINES**  
 HORIZONTAL TYPES



For  
 Extra Attachments  
 Fitting  
 These Machines  
 See Pages 50 to 57

**STANDARD EQUIPMENT FURNISHED**

Motors mounted on swivel and adjustable tripod stand, three-speed ball bearing countershaft, belt guard, flexible shaft, vulcanized covering, screw driving and nut setting attachment, one socket or one screw driver and finder, spindle holder, 2 belts, switch, wiring, wrenches.

See Code Page 63

**SPECIFICATIONS**

| Machine | H. P.         | Standard Rating                                                    | Speeds of Attachment          | Size of Flexible Shaft                                            | Approximate Capacities  |                                         |
|---------|---------------|--------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------|-------------------------|-----------------------------------------|
|         |               |                                                                    |                               |                                                                   | Nuts                    | Screws                                  |
| No. 6   | $\frac{1}{2}$ | 110 or 220<br>60 Cycle<br>1, 2 or 3 Phase<br>or<br>110 or 220 D.C. | 100<br>180 } R. P.M.<br>320 } | Core<br>$\frac{1}{2}$ " x 6'<br>Casing<br>$1\frac{5}{16}$ " O. D. | Nuts<br>$\frac{1}{2}$ " | Screws<br>No. 14 to No. 18<br>Inclusive |
| No. 7   | 1             | 220<br>60 Cycle<br>3 Phase                                         | 90<br>180 } R.P.M.<br>360 }   | Core<br>$\frac{5}{8}$ " x 7'<br>Casing<br>$1\frac{7}{16}$ " O. D. | Nuts<br>$\frac{3}{4}$ " | Screws<br>No. 14 to No. 24<br>Inclusive |

Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.

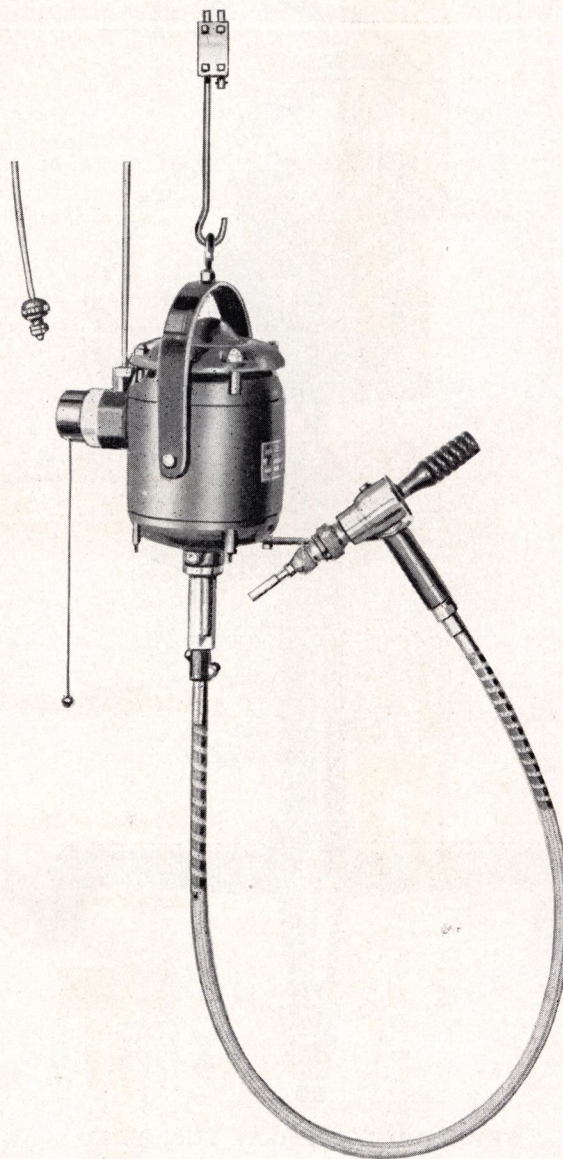




No. 4—No. 5—No. 6—No. 7  
**SCREW DRIVING AND NUT SETTING MACHINES**  
 VERTICAL TYPES

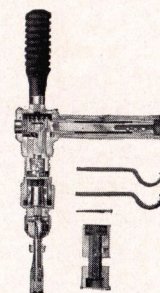
Adjustable Friction Screw Driving Attachment provides for any desired tension, driving every screw or nut uniformly when properly adjusted and locked in place.

No. 4 machine has metal casing. No. 5, No. 6 and No. 7 have vulcanized covering.



These machines are furnished as illustrated, mounted in Swivel Bale and Adjustable Tie Rods with switch and wiring. 1 screw driver and finder for two sizes of screws or one socket is furnished with each equipment.

Friction Screw Driving and Nut Setting Attachment



Worm Drive  
 10 to 1 Reduction

See Code Page 63

**SPECIFICATIONS**

| Machine | H.P.          | Standard Rating             | Motor Speed | Attachment Speed, R.P.M. | Size Flexible Shaft                                     | Capacities              |                          | Shipping Weight |
|---------|---------------|-----------------------------|-------------|--------------------------|---------------------------------------------------------|-------------------------|--------------------------|-----------------|
| No. 4   | $\frac{1}{4}$ | 110, 60 Cy., 1 Ph. or D.C.  | 3400        | 340                      | Core $\frac{5}{16}$ " x 5' Casing $\frac{5}{8}$ " O.D.  | Screws No. 4 to No. 10  | Nuts to $\frac{3}{16}$ " | 50 lbs.         |
| No. 5   | $\frac{1}{3}$ | 110, 60 Cy., 1 Ph. or D.C.  | 3400        | 340                      | Core $\frac{7}{16}$ " x 5' Casing $1\frac{1}{8}$ " O.D. | Screws No. 10 to No. 14 | Nuts to $\frac{3}{8}$ "  | 60 lbs.         |
| No. 6   | $\frac{1}{2}$ | 110, 60 Cy., 1, 2, or 3 Ph. | 1725        | 172                      | Core $\frac{1}{2}$ " x 6' Casing $1\frac{1}{8}$ " O.D.  | Screws No. 14 to No. 18 | Nuts to $\frac{1}{2}$ "  | 100 lbs.        |
| No. 7   | 1             | 220, 60 Cy., 3 Ph.          | 1725        | 172                      | Core $\frac{5}{8}$ " x 7' Casing $1\frac{1}{8}$ " O.D.  | Screws No. 14 to No. 24 | Nuts to $\frac{3}{4}$ "  | 115 lbs.        |

Motors of voltages, cycles or phases other than those specified above as standard, are subject to special prices.

Check carefully and specify voltage, cycle and phase desired.

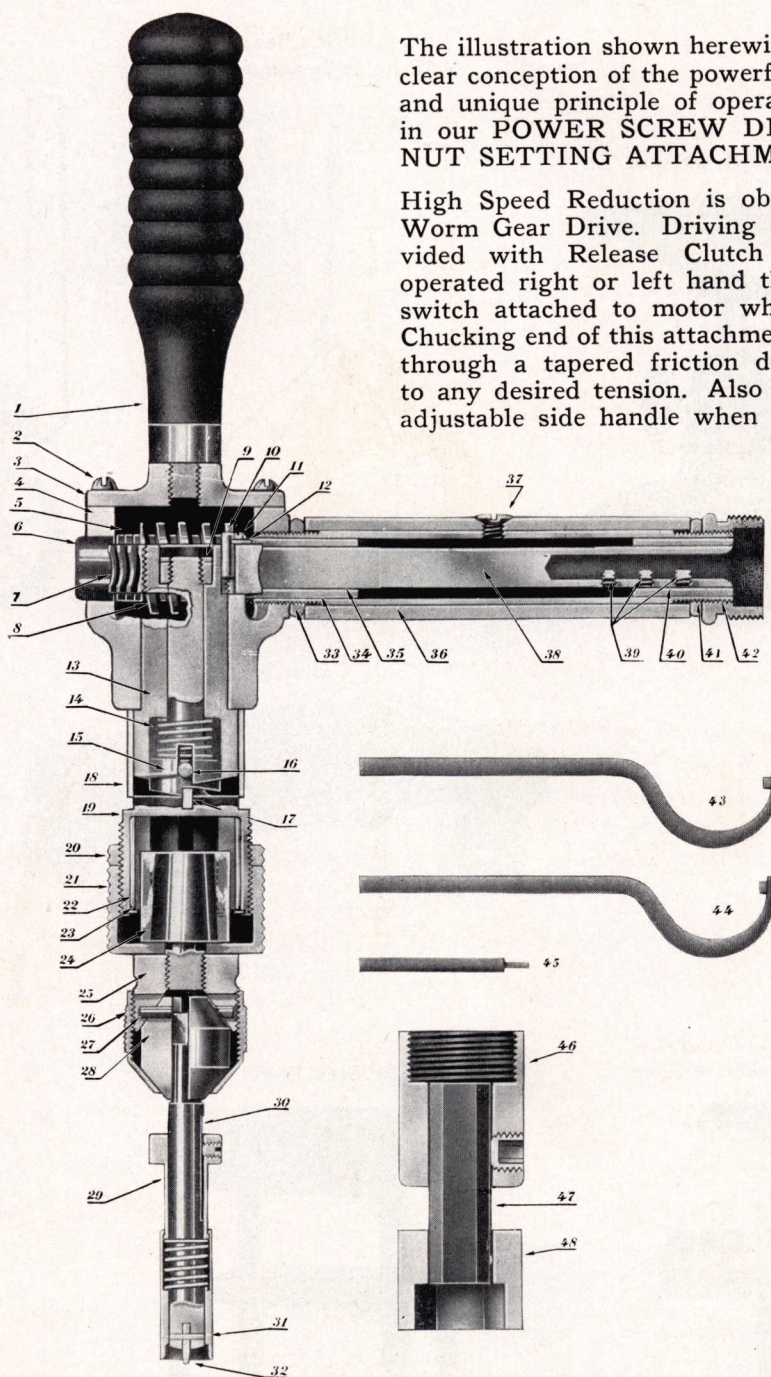


## POWER SCREW DRIVING AND NUT SETTING ATTACHMENT

The illustration shown herewith gives a very clear conception of the powerful construction and unique principle of operation contained in our POWER SCREW DRIVING AND NUT SETTING ATTACHMENT.

High Speed Reduction is obtained through Worm Gear Drive. Driving Spindle is provided with Release Clutch and may be operated right or left hand through reverse switch attached to motor when so ordered. Chucking end of this attachment is controlled through a tapered friction drive adjustable to any desired tension. Also furnished with adjustable side handle when desired.

- 1 Handle (wood).
- 2 Round head screws.
- 3 Cover for housing.
- 4 Housing.
- 5 Ball bearing thrust.
- 6 End bearing.
- 7 Wormwheel.
- 8 Worm.
- 9 Nut for friction body.
- 10 Pin for wormwheel.
- 11 Screw for wormwheel.
- 12 Washer for wormwheel.
- 13 Clutch sleeve.
- 14 Clutch spring.
- 15 Reverse clutch.
- 16 Reverse clutch pin.
- 17 Clutch key.
- 18 Clutch ferrule.
- 19 Friction body.
- 20 Friction check nut.
- 21 Knurled sleeve.
- 22 Friction fibres.
- 23 Fibre retainer.
- 24 Driving plug.
- 25 Chuck body.
- 26 Chuck sleeve.
- 27 Jaw pin.
- 28 Chuck jaws.
- 29 Sleeve collar.
- 30 Shank for screw driver.
- 31 Finder sleeve.
- 32 Bit.
- 33 Spindle check nut.
- 34 Spindle sleeve.
- 35 Front bearing.
- 36 Fibre handle.
- 37 Oil screw.
- 38 Shaft.
- 39 Internal keys.
- 40 Rear bearing.
- 41 Spindle check nut.
- 42 Threaded bushing.
- 43 Spanner wrench (small).
- 44 Spanner wrench (large).
- 45 Pin wrench.
- 46 Adapter.
- 47 Socket shank.
- 48 Socket.
- .... Spring for finder.
- .... Pin for bit.



**SPECIFICATIONS FRICTION SCREW DRIVER AND NUT SETTING ATTACHMENTS**

| No. | Length less Handle and Bits | Weight      | Worm Drive Gear Ratio | Approximate Capacities |           |
|-----|-----------------------------|-------------|-----------------------|------------------------|-----------|
|     |                             |             |                       | Nuts                   | Screws    |
| 4   | 5 1/4"                      | 2 3/4 lbs.  | 10 to 1               | 1/4"                   | To No. 10 |
| 5   | 6"                          | 4 1/2 lbs.  | 10 to 1               | 3/8"                   | To No. 14 |
| 6   | 8"                          | 8 3/4 lbs.  | 10 to 1               | 1/2"                   | To No. 18 |
| 7   | 10"                         | 24 1/2 lbs. | 12 to 1               | 3/4"                   | To No. 24 |

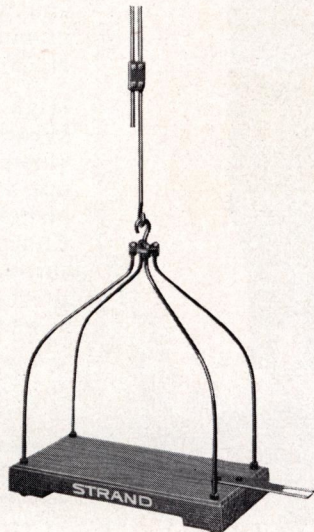


## MOUNTINGS FOR STRAND FLEXIBLE SHAFT EQUIPMENTS

Swivel Bench Column



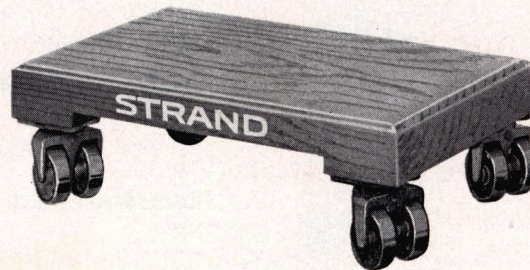
Suspension Base with  
Adjustable Suspension Rods



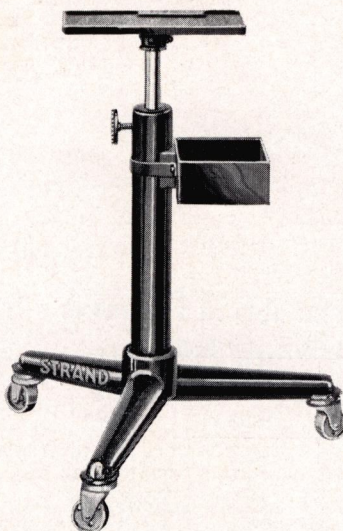
Four Wheel Truck  
with Swivel Base Plate



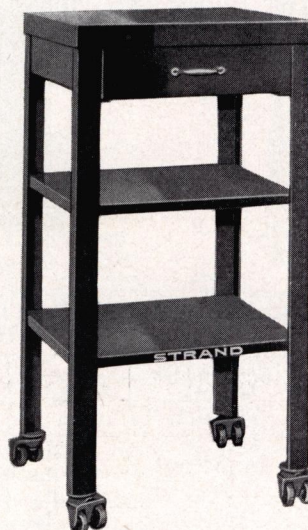
Caster Base



No. 1  
Tripod Stand  
with Swivel Base Plate



30" Steel Stand

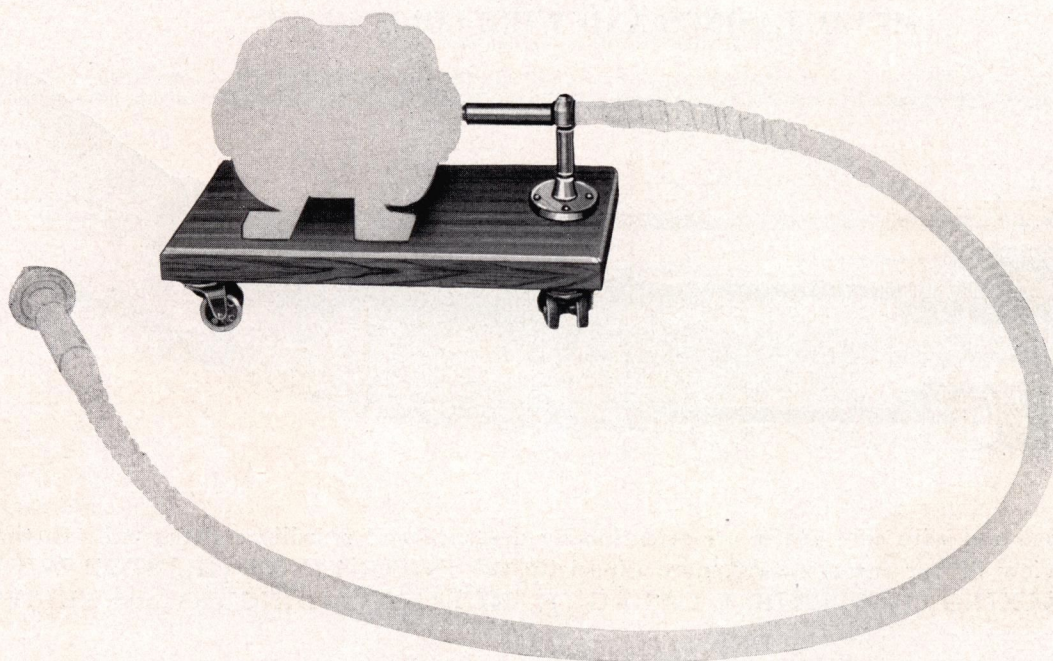


No. 2  
Tripod Stand  
with Swivel Base Plate





### BASE-ADAPTER

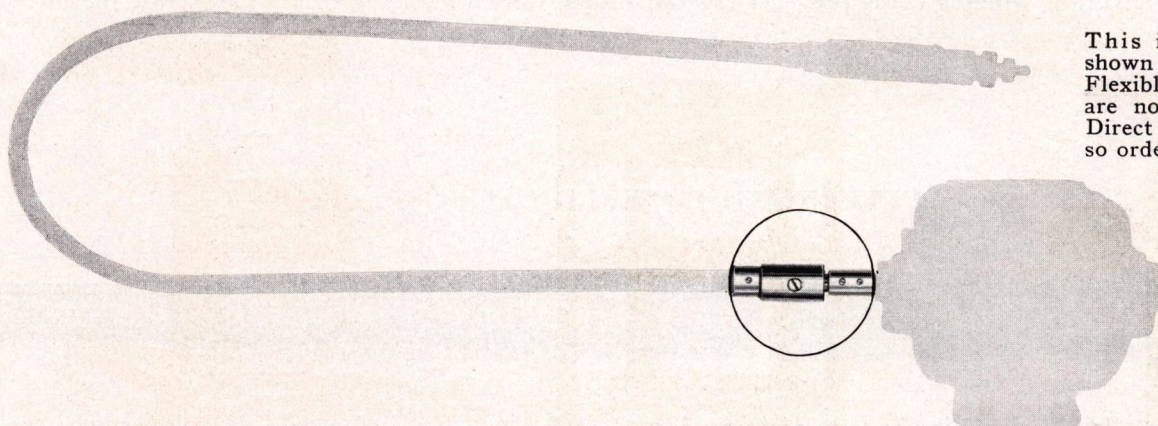


#### NOTE

This illustration is shown with Motor and Flexible Shaft. They are not included with Base-Adapter unless so ordered.

This type of mounting is strongly recommended for operating flexible shafts direct from motor shaft, when customer desires to use his own motor. We build them to drive all sizes of flexible shafts of our own manufacture, from No. 2 to No. 8, of capacities from  $\frac{1}{8}$  H. P. to 2 H. P. This method of operating a flexible shaft direct from motor is simplified and safe, and is especially recommended for the larger sizes of flexible shafts. When ordering specify diameter of motor shaft, length, size of keyway if any, and H. P. of motor.

### Attachment V1 Direct Ball Bearing Motor Coupling



#### NOTE

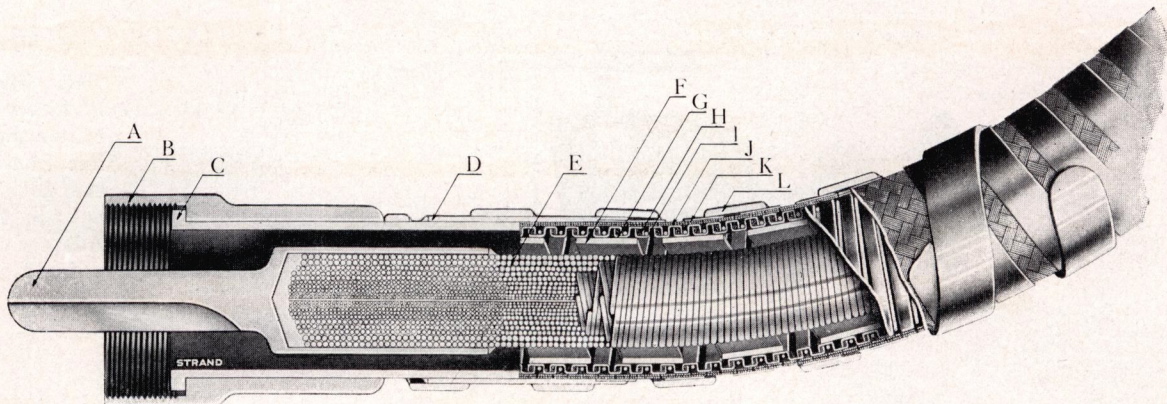
This illustration is shown with Motor and Flexible Shaft. They are not included with Direct Coupling unless so ordered.

The above illustration shows our direct double Ball bearing motor coupling designed for the purpose of operating flexible shafts direct from motor shaft. This direct coupling is especially recommended for our flexible shafts from No. 2 to No. 8, capacities from  $\frac{1}{8}$  H. P. to 2 H. P. When ordering, specify diameter of motor shaft, length, and keyway if any, and H. P. of motor.





## METAL CASINGS AND WIRE CORE SHAFTS



Our metal casings and wire core shafts are scientifically designed and sturdily constructed. In the above cross-sectional view of our metal casing, note especially the INNER LINER (G), STOP WIRE (H), ASBESTOS PACKING (I), FLEXIBLE CASING (J), METAL BRAIDING (K), and REINFORCEMENTS (L).

The INTERLOCKING JOINTS and STOP WIRE prevent short bends beyond a safe radius; the ASBESTOS PACKING prevents leakage of grease; the INNER LINER provides a bearing the full length of the casing for the wire core shaft; and the SWIVEL COUPLINGS prevent twisting of the casing.

## WIRE CORE SHAFTS

The above drawing clearly illustrates the many structural advantages to be found only in STRAND wire core shafts. Note the increased gauges of layers from center to outer layer. This feature makes possible the strongest and most flexible core ever made. The finest quality music wire (possessing the greatest tensile strength obtainable) is used exclusively in the manufacture of our cores. Another noteworthy feature is the fact that our method of winding cores prevents crystallization, thus prolonging to a great extent the life of the core.

## VULCANIZED COVERED CASINGS



Illustrated immediately above is our vulcanized rubber covered casing (grease proof). The inner construction is the same as our metal casing described above except that the outside liner is omitted. Considerable added strength and greater allowance for flexing are made possible by vulcanizing over the metal braid.



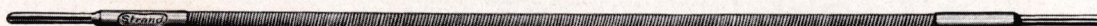


## FLEXIBLE SHAFTS

Core Casing and Ball Bearing Spindle



Wire Core with Driving Ends



Casing with Couplings



Metal Braided Covering with Reinforcements  
or  
Vulcanized Over Metal Braid

We build flexible shafts up to 30 ft. long

Continuous lengths on special order.

### NOTE

For intermittent duty we recommend the metal braided covering. For hard and constant service we recommend the vulcanized covering over the metal braid. We build and carry in stock both types.

Our standard shafts are wound for right hand rotation. Left hand wound made up on special order.

### SPECIFICATIONS WIRE CORES AND CASINGS

| No. | Diameter of Wire Core | Standard Length | Metal Casing O.D. | Vulcanized Casings O.D. | H.P. Rating at Basic Speed | Basic Speed R.P.M. | Maximum Speed R.P.M. |
|-----|-----------------------|-----------------|-------------------|-------------------------|----------------------------|--------------------|----------------------|
| 2   | $\frac{3}{16}$ "      | 4'              | $\frac{1}{2}$ "   | Special                 | $\frac{1}{8}$ H.P.         | 1800               | 10,000               |
| 4   | $\frac{5}{16}$ "      | 5'              | $\frac{5}{8}$ "   | $\frac{15}{16}$ "       | $\frac{1}{4}$ H.P.         | 1800               | 10,000               |
| 5   | $\frac{7}{16}$ "      | 5'              | $\frac{13}{16}$ " | $1\frac{1}{16}$ "       | $\frac{1}{3}$ H.P.         | 1800               | 7,200                |
| 6   | $\frac{1}{2}$ "       | 6'              | 1"                | $1\frac{5}{16}$ "       | $\frac{1}{2}$ H.P.         | 900                | 5,000                |
| 6A  | $\frac{9}{16}$ "      | 6'              | 1"                | $1\frac{5}{16}$ "       | $\frac{3}{4}$ H.P.         | 900                | 4,500                |
| 7   | $\frac{5}{8}$ "       | 7'              | $1\frac{1}{8}$ "  | $1\frac{7}{16}$ "       | 1 H.P.                     | 900                | 3,600                |
| 7A  | $\frac{3}{4}$ "       | 7'              | $1\frac{1}{4}$ "  | $1\frac{9}{16}$ "       | $1\frac{1}{2}$ H.P.        | 900                | 3,600                |
| 8   | $\frac{7}{8}$ "       | 7'              | $1\frac{1}{2}$ "  | $1\frac{7}{8}$ "        | 2 H.P.                     | 400                | 3,000                |

### SMALLEST CIRCLE IN WHICH SHAFTS MAY BE OPERATED WITH SAFETY

| No. 2    | No. 4    | No. 5     | No. 6     | No. 6A    | No. 7     | No. 7A    | No. 8     |
|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Metal 8" | Metal 8" | Metal 12" | Metal 14" | Metal 14" | Metal 16" | Metal 18" | Metal 20" |
| Vul. —   | Vul. 10" | Vul. 14"  | Vul. 16"  | Vul. 16"  | Vul. 18"  | Vul. 20"  | Vul. 22"  |

We wind our cores from the highest quality piano wire obtainable.

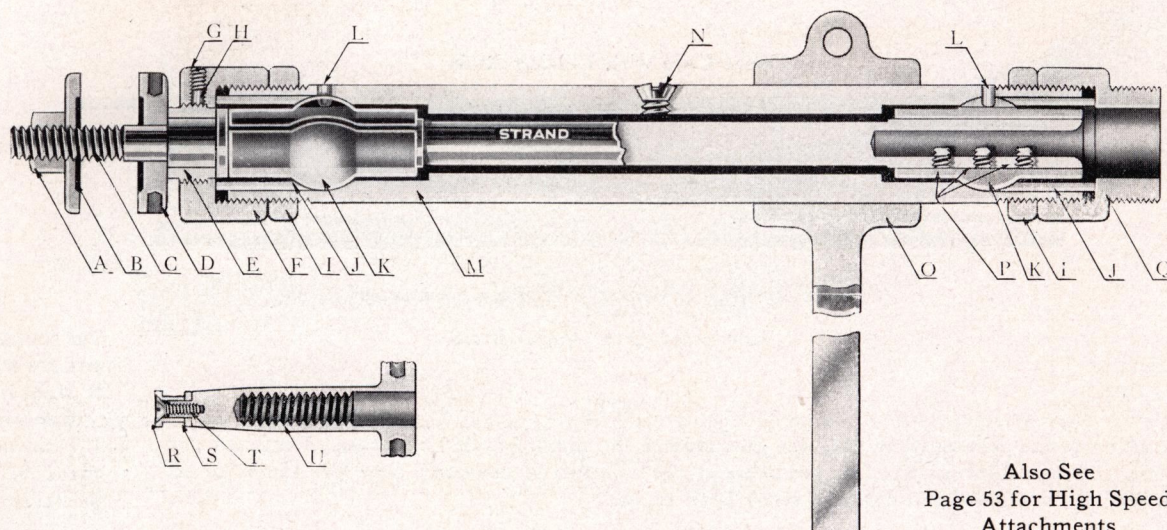
The finest quality of rubber and canvas are used in the vulcanizing of our casings.

Workmanship unexcelled.





## TOOL POST GRINDING SPINDLES L-5—L-6



Also See  
Page 53 for High Speed  
Attachments

### PARTS FOR L-5 AND L-6 SPINDLES

| Key Letter | Name of Part             | L-5 Part No. | L-6 Part No. | Key Letter | Name of Part             | L-5 Part No. | L-6 Part No. |
|------------|--------------------------|--------------|--------------|------------|--------------------------|--------------|--------------|
| A          | Spindle Nut.....         | M-371        | M-372        | L          | Anchor Pin.....          | M-189        | M-134        |
| B          | Loose Flange.....        | M-184        | M-129        | M          | Sleeve.....              | M-193        | M-138        |
| C          | Shaft.....               | M-192        | M-137        | N          | Oil Screw.....           | M- 62        | M- 62        |
| D          | Tight Flange.....        | M-185        | M-130        | O          | Tool Post Shank.....     | M-180        | M-125        |
| E          | Thrust Bushing.....      | M-186        | M-131        | P          | Internal Keys.....       |              |              |
| F          | Front Adjusting Nut..... | M-187        | M-132        | Q          | Rear Adjusting Nut.....  | M-188        | M-133        |
| G          | Set Screw.....           | M-195        | M-195        | R          | Collar for Int. Att..... | M-362        | M-362        |
| H          | Plug.....                | M-194        | M-139        | S          | Washer for Int. Att..... | M-363        | M-363        |
| I          | Check Nut.....           | M-183        | M-128        | T          | Screw for Int. Att.....  | M-364        | M-364        |
| J          | Adjusting Thimble.....   | M-191        | M-136        | U          | Body for Int. Att.....   | M-361        | M-365        |
| K          | Bearing.....             | M-190        | M-135        | V          | Shank Clamp Screw.....   | M-709        | M-126        |

The above illustration shows our "L" Spindle in detail. The most valuable features are the adjustable Radial and Thrust Bearings. The experienced mechanic will appreciate the advantages of being able to run a Grinding Spindle to the closest adjustment without heating. Note adjustment of Tool Post Shank.

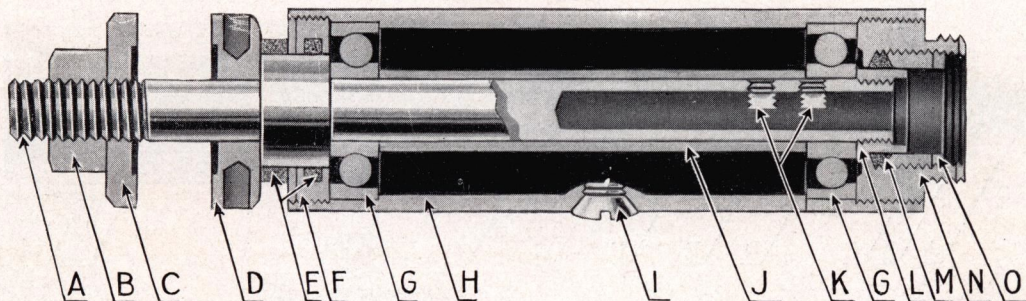
The material is of the highest quality obtainable and the workmanship is unexcelled. The shaft is hardened and ground, and run in Bronze Bearings. Oil is applied through center oil hole and centrifugally fed to the bearings.





## B1—HAND SPINDLES

No. 2—No. 4  
(Ball-Bearing)

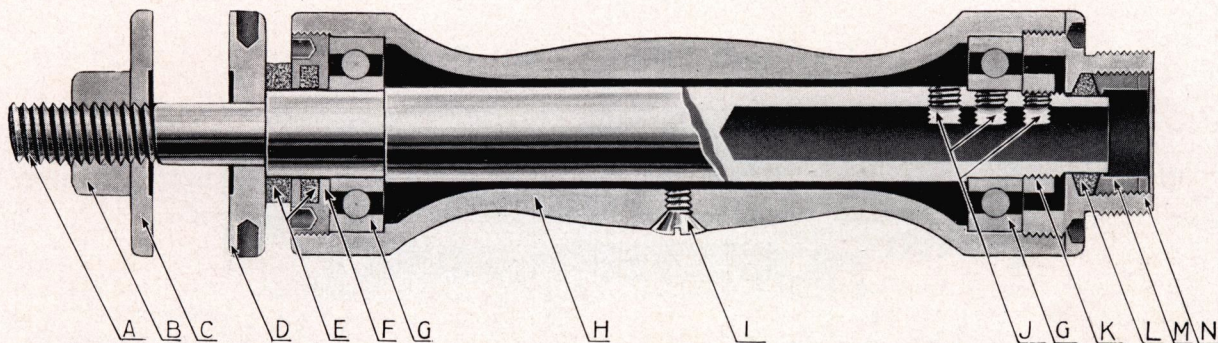


PARTS FOR NO. 2 AND NO. 4 HAND SPINDLES BALL BEARING

| Key Letter | Name of Part       | No. 2 Part Number | No. 4 Part Number | Key Letter | Name of Part          | No. 2 Part Number | No. 4 Part Number |
|------------|--------------------|-------------------|-------------------|------------|-----------------------|-------------------|-------------------|
| A          | Shaft.....         | M-816             | M-832             | I          | Oil Screw.....        | M-235             | M- 62             |
| B          | Spindle Nut.....   | M-369             | M-370             | J          | Spacer Sleeve.....    | .....             | M-841             |
| C          | Loose Flange.....  | M-226             | M- 27             | K          | Internal Keys.....    | .....             | .....             |
| D          | Tight Flange.....  | M-225             | M- 28             | L          | Sleeve Nut.....       | M-827             | M-843             |
| E          | Felt Washer.....   | M-820             | M-836             | M          | Felt Washer Rear..... | M-828             | M-844             |
| F          | Retainer Ring..... | M-821             | M-837             | N          | Retainer Bushing..... | M-829             | M-845             |
| G          | Ball Bearings..... | .....             | .....             | O          | Packing Ring.....     | M-830             | M-846             |
| H          | Housing.....       | M-823             | M-839             |            |                       |                   |                   |

## C1—HAND SPINDLES

No. 5, No. 6, No. 7, No. 8  
(Ball-Bearing)



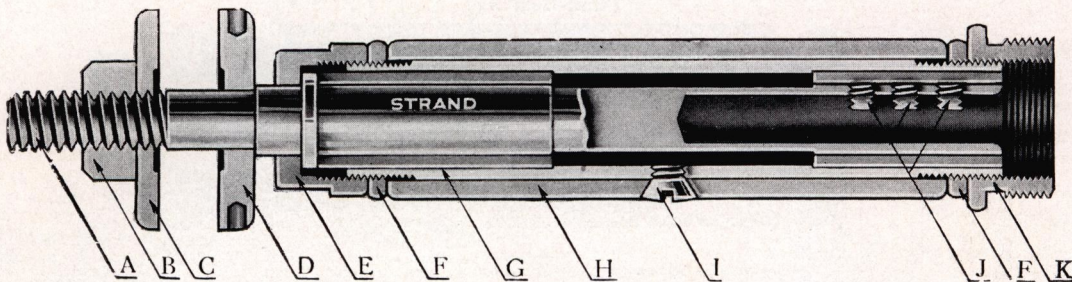
PARTS FOR NO. 5, NO. 6, NO. 7, NO. 8, HAND SPINDLES BALL BEARING

| Key Letter | Size Number              | 5            | 6-6A  | 7-7A  | 8     |
|------------|--------------------------|--------------|-------|-------|-------|
|            | Name of Part             | Part Numbers |       |       |       |
| A          | Shaft.....               | M-774        | M-778 | M-752 | M-802 |
| B          | Spindle Nut.....         | M-775        | M-372 | M-373 | M-374 |
| C          | Loose Flange.....        | M-776        | M- 71 | M-339 | M-375 |
| D          | Tight Flange.....        | M-777        | M- 70 | M-338 | M-376 |
| E          | Felt Washer (Front)..... | M-778        | M-792 | M-757 | M-806 |
| F          | Retainer Ring.....       | M-779        | M-793 | M-755 | M-807 |
| G          | Ball Bearings.....       | .....        | ..... | ..... | ..... |
| H          | Housing.....             | M-781        | M-795 | M-751 | M-809 |
| I          | Oil Screw.....           | M- 62        | M- 62 | M- 62 | M- 62 |
| J          | Internal Keys.....       | .....        | ..... | ..... | ..... |
| K          | Check Nut.....           | M-784        | M-798 | M-847 | M-812 |
| L          | Felt Washer (Rear).....  | M-785        | M-799 | M-758 | M-813 |
| M          | Packing Ring.....        | M-786        | M-800 | M-756 | M-814 |
| N          | Retainer Bushing.....    | M-787        | M-801 | M-753 | M-815 |





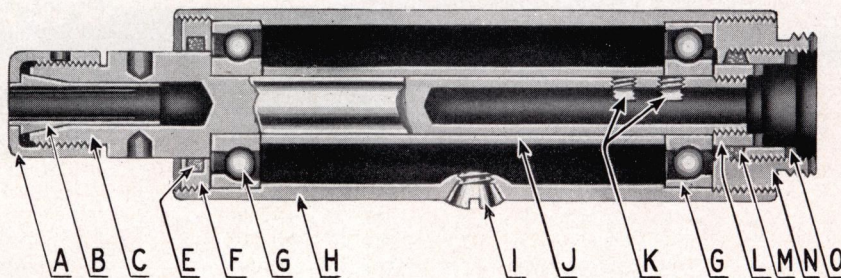
## D—HAND SPINDLES (Bronze-Bearings)



### PARTS FOR HAND SPINDLES (Bronze Bearing)

| Key Letter | Size Numbers.....         | 2            | 4     | 5     | 6-6A  | 7-7A  | 8     |
|------------|---------------------------|--------------|-------|-------|-------|-------|-------|
|            | Name of Part              | Part Numbers |       |       |       |       |       |
| A          | Shaft.....                | M-237        | M- 41 | M- 52 | M- 78 | M-335 | M-382 |
| B          | Spindle Nut.....          | M-369        | M-370 | M-371 | M-372 | M-373 | M-374 |
| C          | Loose Flange.....         | M-226        | M- 27 | M- 59 | M- 71 | M-339 | M-375 |
| D          | Tight Flange.....         | M-225        | M- 28 | M- 60 | M- 70 | M-338 | M-376 |
| E          | End Thrust Cap.....       | M-229        | M- 58 | M- 58 | M- 80 | M-337 | M-377 |
| F          | Check Nut.....            | M-224        | M- 56 | M- 56 | M- 79 | M-341 | M-378 |
| G          | Sleeve with Bearings..... | M-243        | M- 38 | M- 61 | M- 89 | M-336 | M-379 |
| H          | Fibre Handle.....         | M-234        | M- 37 | M- 57 | M- 76 | M-343 | M-380 |
| I          | Oil Screw.....            | M-235        | M- 62 | M- 62 | M- 62 | M- 62 | M- 62 |
| J          | Internal Keys.....        |              |       |       |       |       |       |
| K          | Threaded Bushing.....     | M-334        |       | M- 63 | M- 81 | M-340 | M-381 |

## A1—HAND PIECES (Ball Bearing)



### PARTS FOR HAND PIECES (Ball Bearing)

| Key Letter | Size Numbers             | 2            | 4     | 5     | Key Letter | Size Numbers            | 2            | 4     | 5     |
|------------|--------------------------|--------------|-------|-------|------------|-------------------------|--------------|-------|-------|
|            | Name of Part             | Part Numbers |       |       |            | Name of Part            | Part Numbers |       |       |
| A          | Cap.....                 | M-865        | M-865 | M-865 | J          | Spacer Sleeve.....      | M-104        | M-841 | M-122 |
| B          | Collet.....              | M-866        | M-866 | M-866 | K          | Internal Keys.....      |              |       |       |
| C          | Shaft.....               | M-103        | M-864 | M-108 | L          | Sleeve Nut.....         | M-827        | M-843 | M-121 |
| E          | Felt Washer (Front)..... | M-820        | M-836 | M-836 | M          | Felt Washer (Rear)..... | M-828        | M-844 | M-785 |
| F          | Retainer Ring.....       | M-102        | M-837 | M-123 | N          | Retainer Bushing.....   | M-829        | M-845 | M-114 |
| G          | Ball Bearings.....       |              |       |       | O          | Packing Ring.....       | M-830        | M-846 | M-124 |
| H          | Housing.....             | M-823        | M-839 | M-109 | P          | Check Nut.....          |              |       | M-110 |
| I          | Oil Screw.....           | M-235        | M- 62 | M- 62 |            |                         |              |       |       |

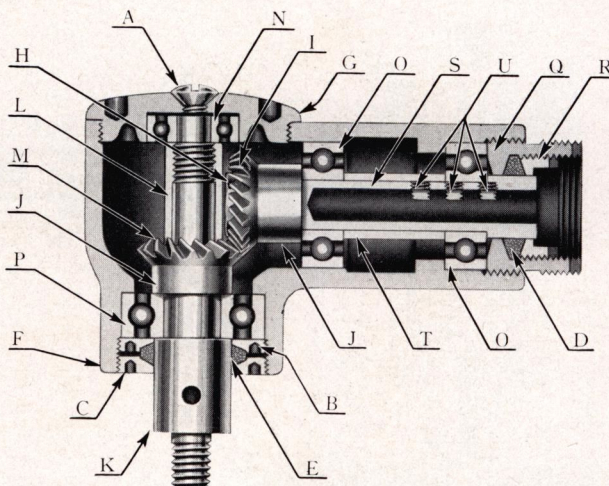








## L1 AND L2 RIGHT ANGLE ATTACHMENTS



### NOTE

Illustration shows L1 Right Angle Sanding Attachment. L2 Attachment same style except that it has reduction of 2 to 1 ratio.

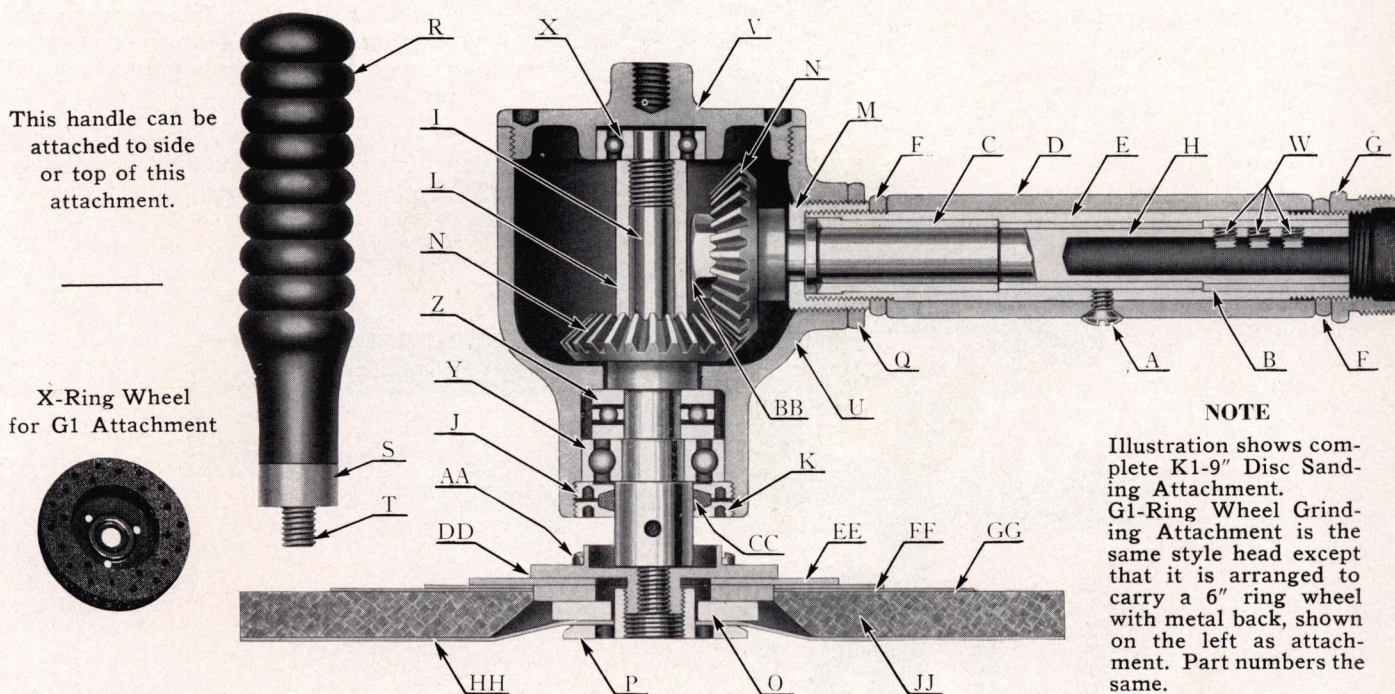
Also equipped with side handle  
(Not shown in illustration)

### PARTS FOR L-1 AND L-2 ATTACHMENTS

| Key Letter | Name of Parts       | L-1 Part Numbers | L-2 Part Numbers |      | Name of Parts                | L-1 Part Numbers | L-2 Part Numbers |
|------------|---------------------|------------------|------------------|------|------------------------------|------------------|------------------|
| A          | Oil Screw.....      | M- 62            | M- 62            | M    | Gear for Spindle.....        | M-1134           | M-1143           |
| B          | Retainer Ring.....  | M- 230           | M- 230           | N    | Ball Bearing.....            | M-1135           | M-1135           |
| C          | Packing Ring.....   | M- 236           | M- 236           | O    | Ball Bearing.....            | M-1138           | M-1138           |
| D          | Felt Washer.....    | M- 758           | M- 758           | P    | Ball Bearing.....            | M-1139           | M-1139           |
| E          | Felt Washer.....    | M- 819           | M- 819           | Q    | Retainer Bushing.....        | M-1152           | M-1152           |
| F          | Housing.....        | M- 825           | M- 825           | R    | Packing Ring.....            | M-1153           | M-1153           |
| G          | Cover.....          | M- 826           | M- 826           | S    | Shaft.....                   | M-1154           | M-1146           |
| H          | Nut for Shaft.....  | M- 917           | M-1145           | T    | Spacer Sleeve.....           | M-1155           | M-1151           |
| I          | Gear for Shaft..... | M- 918           | M-1144           | .... | Side Handle (not shown)..... | M-1159           | M-1159           |
| J          | Key.....            | M- 919           | M-1149           | .... | Pin for Side Handle          |                  |                  |
| K          | Spindle.....        | M- 920           | M-1150           | .... | (not shown).....             | M-1160           | M-1160           |
| L          | Sleeve Nut.....     | M- 921           | M-1147           | U    | Internal Keys.....           | .....            | .....            |



## K1—9" RIGHT ANGLE DISC SANDING ATTACHMENT WITH HARD FELT SANDING PAD AND G1—6" RIGHT ANGLE RING WHEEL GRINDING ATTACHMENT



### PARTS FOR K1 AND G1 ATTACHMENTS

| Key Letters | Name of Parts               | Part Numbers | Key Letters | Name of Parts                                     | Part Numbers |
|-------------|-----------------------------|--------------|-------------|---------------------------------------------------|--------------|
| A           | Oil Screw.....              | M- 62        | S           | Collar.....                                       | M- 612       |
| B           | Rear Bearing.....           | M- 74        | T           | Stud.....                                         | M- 613       |
| C           | Front Bearing.....          | M- 75        | U           | Housing.....                                      | M- 770       |
| D           | Handle.....                 | M- 76        | V           | Cover.....                                        | M- 771       |
| E           | Sleeve.....                 | M- 77        | W           | Internal Keys.....                                |              |
| F           | Check Nut.....              | M- 79        | X           | Ball Bearing.....                                 | M-1137       |
| G           | Threaded Bushing.....       | M- 81        | Y           | Ball Bearing.....                                 | M-1140       |
| H           | Shaft.....                  | M- 106       | Z           | Ball Thrust Bearing.....                          | M-1157       |
| I           | Spindle.....                | M- 107       | AA          | 10-32 Fil. Head Screws $\frac{9}{16}$ " Long..... |              |
| J           | Retainer Bushing.....       | M- 147       | BB          | Nut.....                                          | M- 260       |
| K           | Packing Ring.....           | M- 148       | CC          | Felt Washer.....                                  | M- 822       |
| L           | Sleeve Nut.....             | M- 149       | DD          |                                                   |              |
| M           | End Thrust Cap.....         | M- 150       | EE          |                                                   |              |
| N           | Miter Gear.....             | M- 151       | FF          | Sanding Pad.....                                  |              |
| O           | Filler for Sanding Pad..... | M- 152       | GG          |                                                   |              |
| P           | Nut for Sanding Pad.....    | M- 153       | HH          |                                                   |              |
| Q           | Check Nut.....              | M- 378       | JJ          |                                                   |              |
| R           | Handle.....                 | M- 611       |             |                                                   |              |

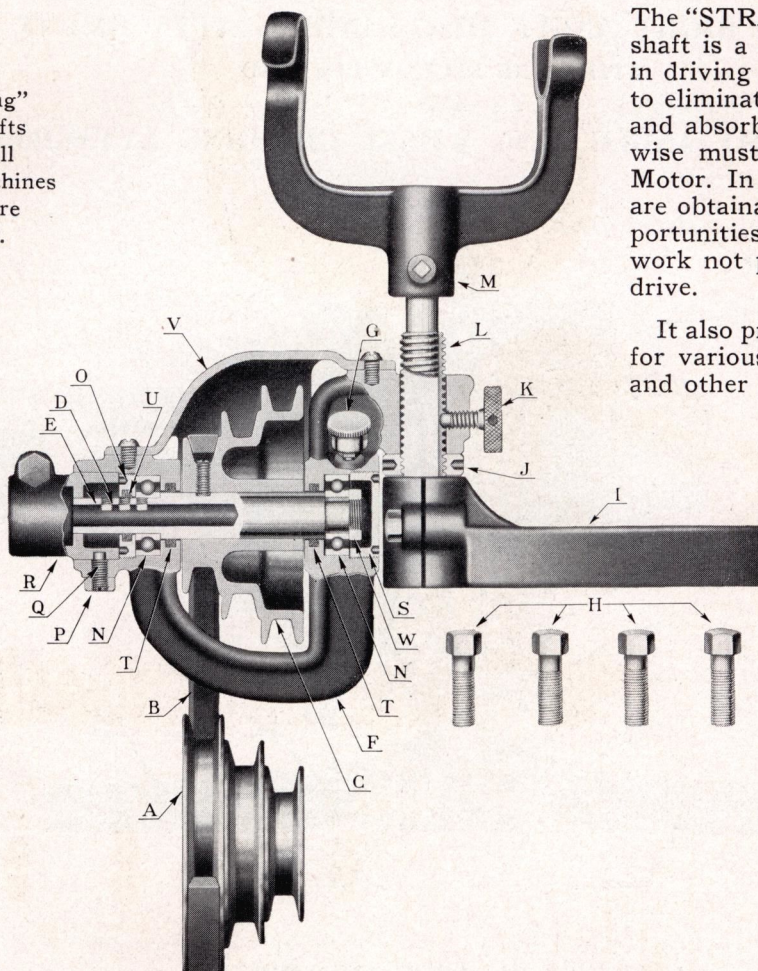




## THREE-SPEED MOTOR COUNTERSHAFTS (Ball Bearing)

### NOTE

These "Ball Bearing"  
Motor Countershafts  
Furnished with All  
Horizontal Type Machines  
of Our Manufacture  
from  $\frac{1}{8}$  to 2 H.P.



The "STRAND" Three Speed Counter-shaft is a valuable and unique feature in driving of Flexible shafts. It serves to eliminate the overloading of Motors and absorbs all vibration which otherwise must be taken directly into the Motor. In addition to this, three speeds are obtainable, which increases the opportunities for doing many classes of work not possible with a single speed drive.

It also provides for changes of speeds for various diameter grinding wheels, and other attachments.

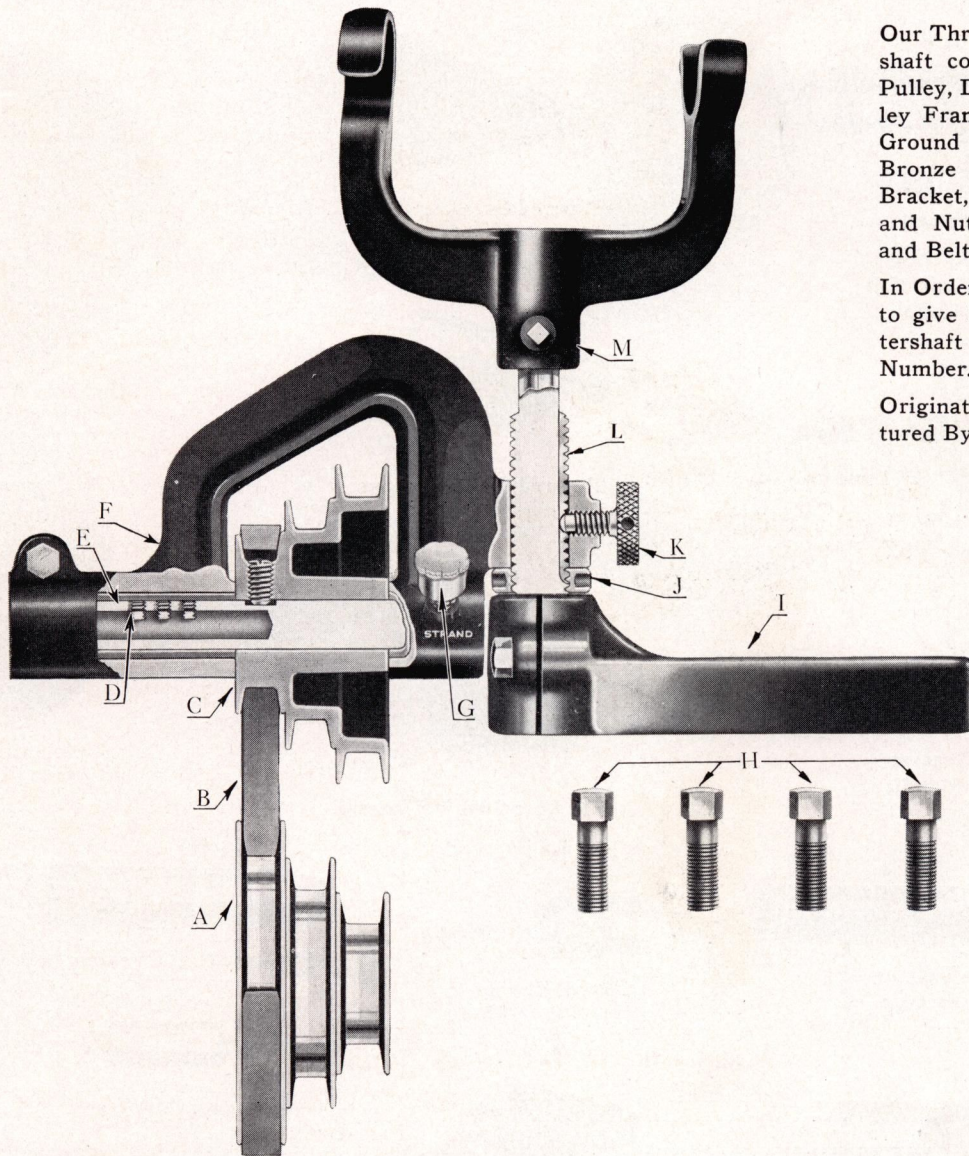
### PARTS FOR COUNTERSHAFTS (Ball Bearings)

| Key Letters | Size Numbers                        | 2-4          | 5-5A   | L-5    | 6-6A   | L-6    | 7-7A   | 8      |
|-------------|-------------------------------------|--------------|--------|--------|--------|--------|--------|--------|
|             | Name of Parts                       | Part Numbers |        |        |        |        |        |        |
| A           | Driving Pulley with Set Screws..... | M- 748       | M- 834 | M-1080 | M- 388 | M- 350 | M- 433 | M- 452 |
| B           | Belt.....                           | M- 383       | M-1023 | M-1092 | M-1094 | M-1095 | M- 393 | M-1104 |
| C           | Driven Pulley with Set Screws.....  | M-1084       | M- 835 | M-1081 | M-1093 | M-1093 | M-1103 | M-1113 |
| D           | Internal Keys.....                  |              |        |        |        |        |        |        |
| E           | Shaft.....                          | M-1082       | M-1019 | M-1019 | M-1097 | M-1097 | M- 732 | M-1105 |
| F           | Pulley Frame.....                   | M-1002       | M- 550 | M- 550 | M- 999 | M- 999 | M- 536 | M- 915 |
| G           | Grease Cup.....                     | M- 384       | M- 384 | M- 384 | M- 384 | M- 384 | M- 384 | M- 384 |
| H           | Bracket Screws.....                 |              |        |        |        |        |        |        |
| I           | Motor Bracket.....                  | M- 466       | M- 833 | M- 833 | M-1098 | M-1098 | M-1115 | M-1114 |
| J           | Adjusting Nut.....                  | M- 117       | M-1021 | M-1021 | M- 98  | M- 98  | M- 214 | M- 459 |
| K           | Thumb Screw.....                    | M- 118       | M- 118 | M- 118 | M- 118 | M- 118 | M- 222 | M- 461 |
| L           | Adjusting Stud.....                 | M- 389       | M-1020 | M-1020 | M-1096 | M- 105 | M- 213 | M- 458 |
| M           | Spindle Holder.....                 | M- 386       | M- 634 | M- 634 | M- 736 | M- 736 | M- 736 | M- 632 |
| N           | Ball Bearings.....                  |              |        |        |        |        |        |        |
| O           | Retainer Ring.....                  | M-1085       | M- 779 | M- 779 | M- 793 | M- 793 | M- 755 | M-1106 |
| P           | Lock Nut.....                       | M-1086       | M-1026 | M-1026 | M-1101 | M-1101 | M-1005 | M-1107 |
| Q           | Lock Screw.....                     | M-1087       | M-1025 | M-1025 | M-1102 | M-1102 | M-1004 | M-1108 |
| R           | Adapter.....                        | M-1001       | M- 551 | M- 551 | M-1000 | M-1000 | M- 535 | M- 916 |
| S           | Retainer Cap.....                   | M-1083       | M-1022 | M-1022 | M-1099 | M-1099 | M-1029 | M-1109 |
| T           | Felt Washer.....                    | M-1088       | M-1024 | M-1024 | M-1100 | M-1100 | M-1003 | M-1110 |
| U           | Felt Washer.....                    | M-1089       | M- 778 | M- 778 | M- 792 | M- 792 | M- 813 | M-1111 |
| V           | Pulley Guard.....                   | M-1090       | M- 897 | M- 897 | M-1017 | M-1017 | M- 993 | M- 994 |
| W           | Check Nut.....                      | M-1091       | M- 784 | M- 784 | M- 798 | M- 798 | M- 847 | M-1112 |





## THREE-SPEED MOTOR COUNTERSHAFTS (Bronze Bearing)



Our Three Speed Counter-shaft consists of Driving Pulley, Driven Pulley, Pulley Frame, Hardened and Ground Shaft running in Bronze Bearings, Motor Bracket, Adjusting Stud and Nut, Spindle Holder and Belt.

In Ordering Parts be sure to give Number of Countershaft as well as the part Number.

Originated and Manufactured By Us Since 1905.

### PARTS FOR MOTOR COUNTERSHAFTS

| Key Letter | Name of Parts                      | No. 2 Part No. | No. 4 Part No. | No. 5 Part No. | No. L-5 Part No. | No. 6 Part No. | No. L-6 Part No. | No. 7 Part No. | No. 8 Part No. |
|------------|------------------------------------|----------------|----------------|----------------|------------------|----------------|------------------|----------------|----------------|
| A          | Driving Pulley with Set Screw..... | M-395          | M-324          | M-171          | M-324            | M-388          | M-350            | M-433          | M-452          |
| B          | Belt.....                          | M-396          | M-383          | M-383          | M-383            | M-387          | M-391            | M-393          | M-462          |
| C          | Driven Pulley with Set Screws..... | M-397          | M-325          | M-170          | M-682            | M- 95          | M- 95            | M-434          | M-456          |
| D          | Internal Key.....                  |                |                |                |                  |                |                  |                |                |
| E          | Shaft.....                         | M-679          | M-111          | M-174          | M-174            | M- 99          | M- 99            | M-217          | M-457          |
| F          | Pulley Frame with Bearings.....    | M-399          | M-438          | M-169          | M-169            | M- 93          | M- 93            | M-210          | M-451          |
| G          | Grease Cup.....                    | M-384          | M-384          | M-385          | M-385            | M-385          | M-385            | M-385          | M-385          |
| H          | Bracket Screws.....                |                |                |                |                  |                |                  |                |                |
| I          | Motor Bracket.....                 | M-680          | M-466          | M-466          | M-466            | M-477          | M-332            | M-212          | M-450          |
| J          | Adjusting Nut.....                 | M-117          | M-117          | M-117          | M-117            | M- 98          | M- 98            | M-214          | M-459          |
| K          | Thumb Screw.....                   | M-118          | M-118          | M-118          | M-118            | M-118          | M-118            | M-222          | M-461          |
| L          | Adjusting Stud.....                | M-673          | M-116          | M-116          | M-116            | M- 97          | M-105            | M-213          | M-458          |
| M          | Spindle Holder.....                | M-406          | M-386          | M-386          | M-386            | M-390          | M-390            | M-390          | M-632          |



## ATTACHMENTS

A1



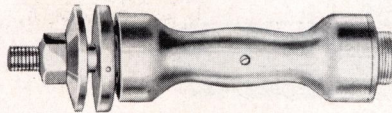
Ball Bearing  
Hand Piece with  
Split Collet

B1



Ball Bearing  
Hand Spindle

C1



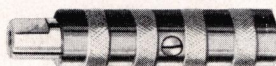
Ball Bearing  
Hand Spindle

D



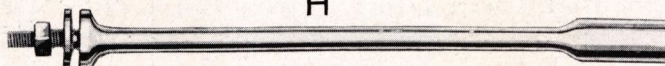
Bronze Bearing  
Hand Spindle

F



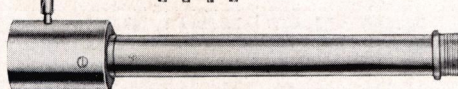
Detachable Handle

H



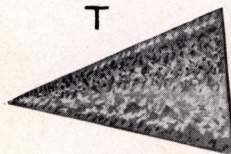
Extension Grinding Spindle

DI



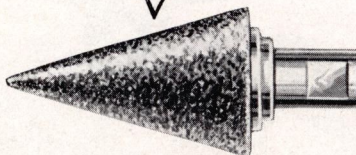
Right Angle Drilling Attachment  
Diam. of Head 2"

T



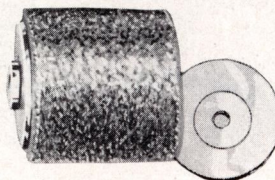
Tapered Grinding Cone  
Threaded  
Solid Wheel

V



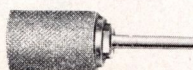
Tapered Grinding Cone  
Solid Wheel  
with Adapter

J



Rubber Sanding Drums

MI



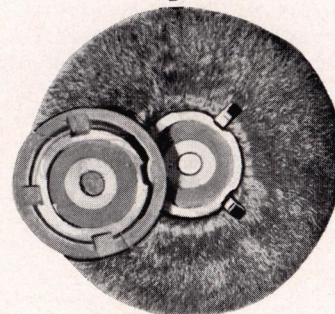
Small Rubber  
Sanding Drums

NI



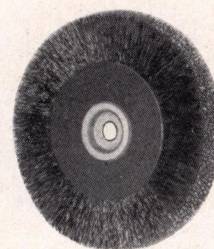
Tapered Rubber Sanding Drum

I



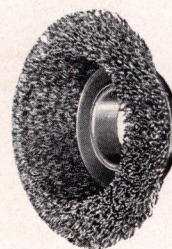
Circular Wire Brush  
with Cast Iron Hub

OI



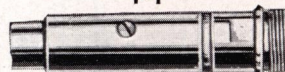
Plain Circular  
Wire Brush

PI



Cup Shape  
Wire Brush

M



Multiple Unit Coupling

L



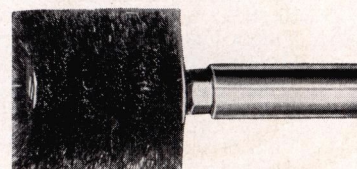
Reducing Coupling

G



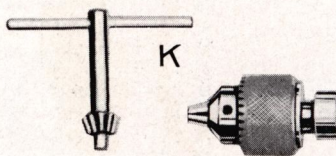
Elongated Wire Brush  
3" x 5"—.006 Wire

Y



Elongated Wire Brush  
3" x 3"—.012 Wire

K

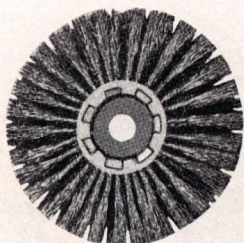


Drill Chuck  
with Adapter



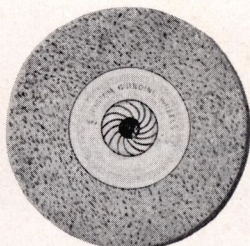
## ATTACHMENTS

QI



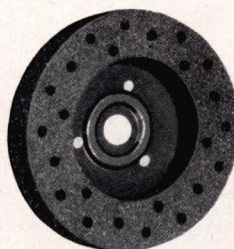
Circular Wire Brush  
Heavy Gauge Twisted Wire

P



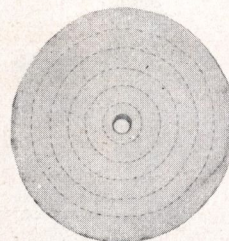
Grinding Wheels

X



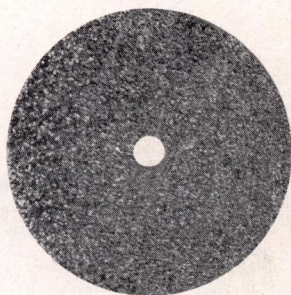
6" Ring Shape  
Grinding Wheel  
with Metal Back

W



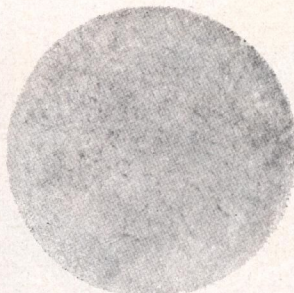
Sewed Cotton Buff

RI



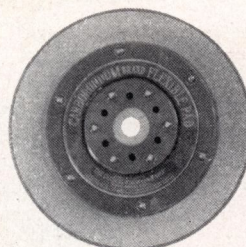
Plain Sanding Discs

SI



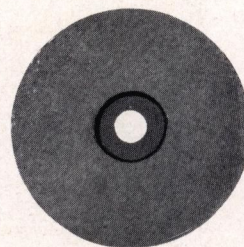
Lambs Wool Pads  
Hood Type

M2



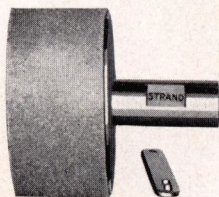
Carborundum  
Patented Flexible  
Rubber Sanding  
Pad

TI



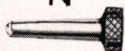
Felt Rubbing Pad

UI



Rubber Sanding Drums  
Fitting Any Style  
Wheel Spindles

N



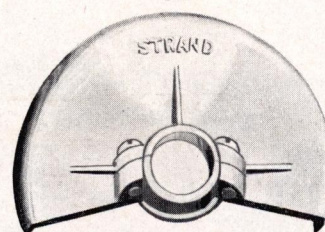
Internal  
Grinding Spindle

S



Grease

E



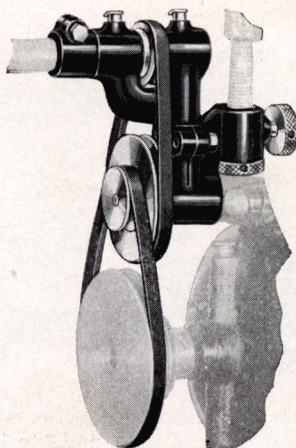
Grinding Wheel Guard

VI



Double Ball Bearing Direct  
Motor Coupling

IOM



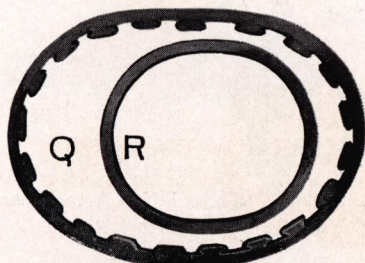
10,000 R.P.M.  
Attachment

Z



Set No. 501 Rotary Files—U Chuck  
Internal Grinding Spindle and  
Aluminum Holder

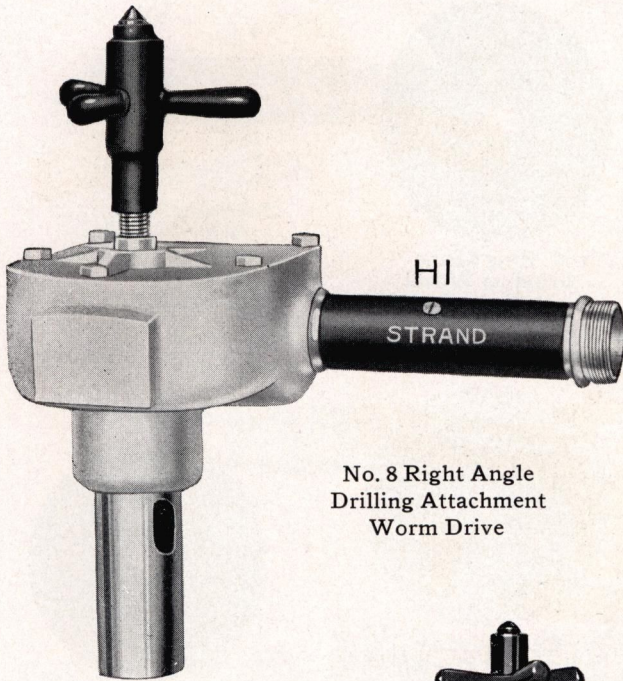
Q R



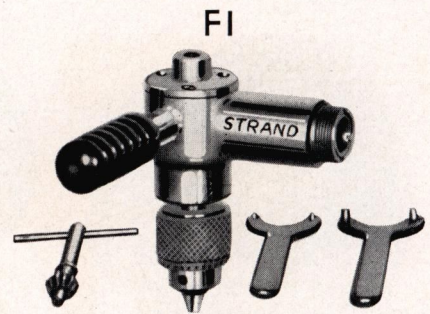
Belts



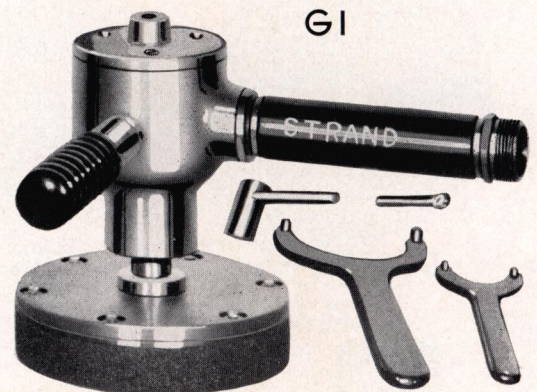
## ATTACHMENTS



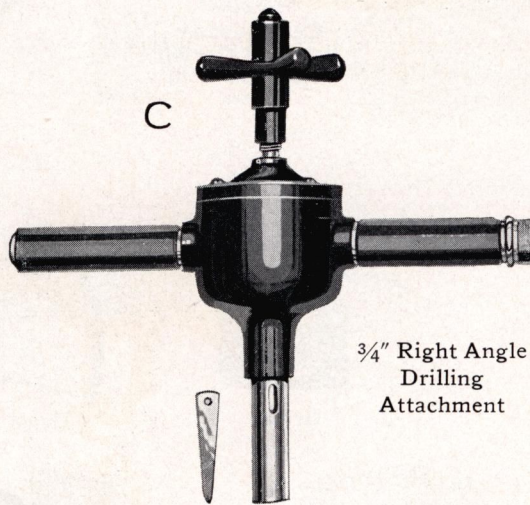
No. 8 Right Angle  
Drilling Attachment  
Worm Drive



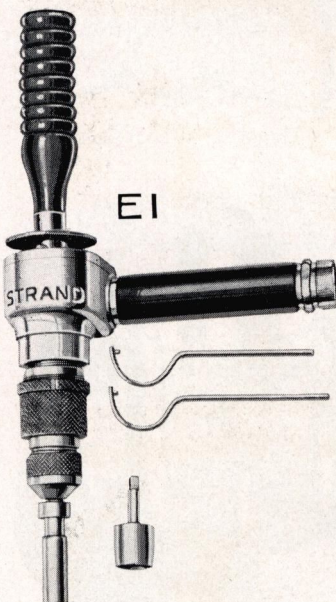
Right Angle Drilling  
Attachment



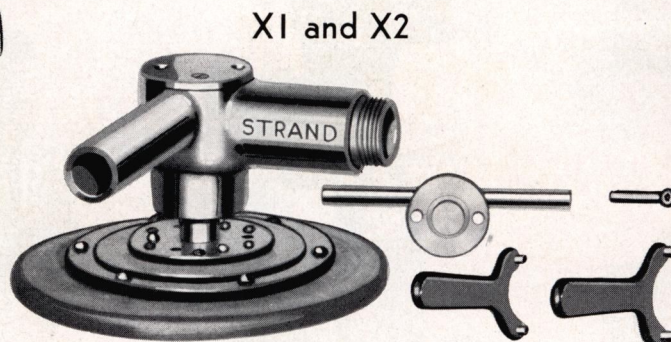
6" Ring Wheel Grinding Attachment



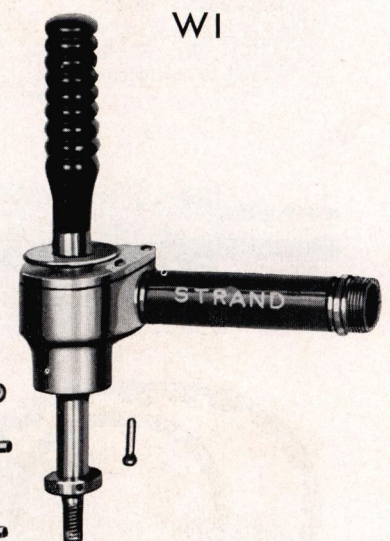
$\frac{3}{4}$ " Right Angle  
Drilling  
Attachment



Screw Driving and  
Nut Setting Attachment



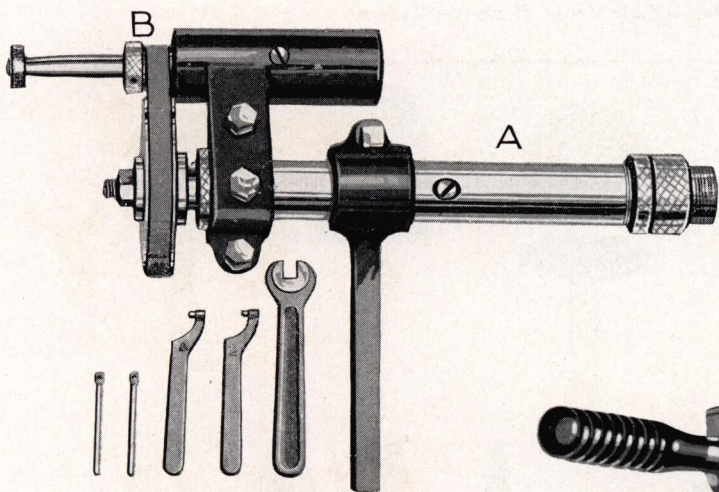
8" Right Angle Sanding and Polishing Attachments  
Gear Ratio of 1 to 1 and 2 to 1



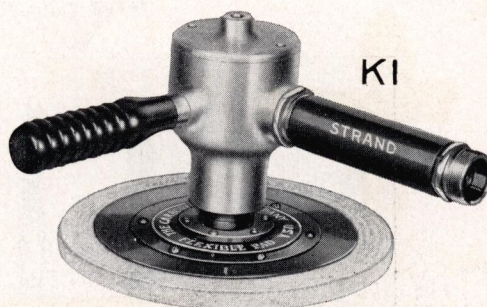
Worm Drive Attachment  
10 to 1 Ratio



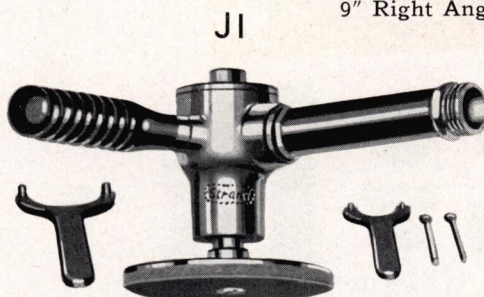
## ATTACHMENTS



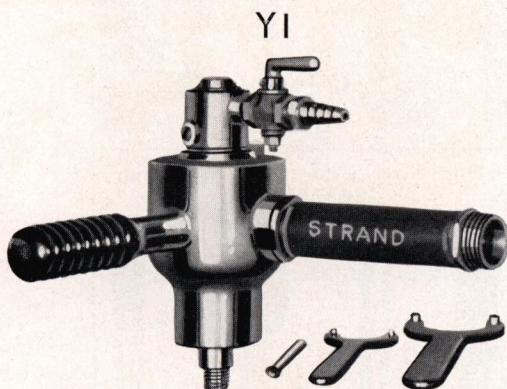
Tool Post  
Grinding Attachment—A  
with  
High Speed Attachment—B



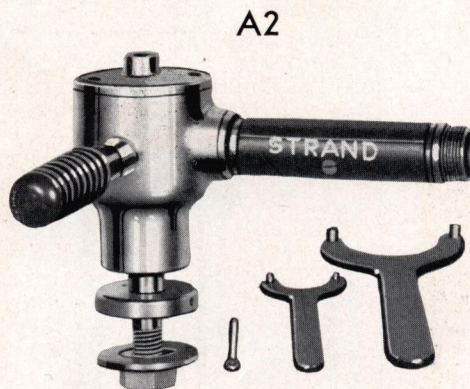
9" Right Angle Disc Sanding Attachment



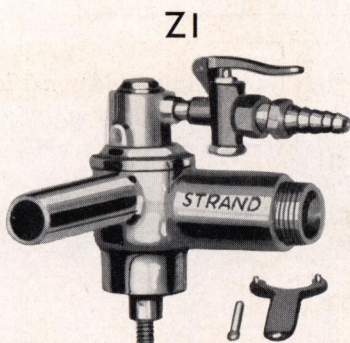
5" Right Angle Sanding Attachment  
Steel Disc and Felt Pad



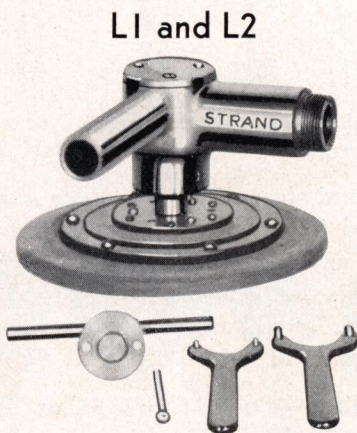
Large Right Angle Attachment  
Water Feed



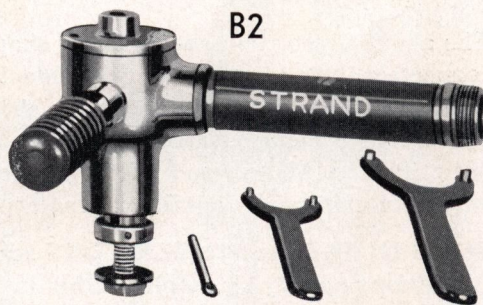
Large Right Angle Grinding Wheel  
Attachment



Small Right Angle  
Attachment—Water Feed



7" Right Angle Disc  
Sanding and Polishing  
Attachments

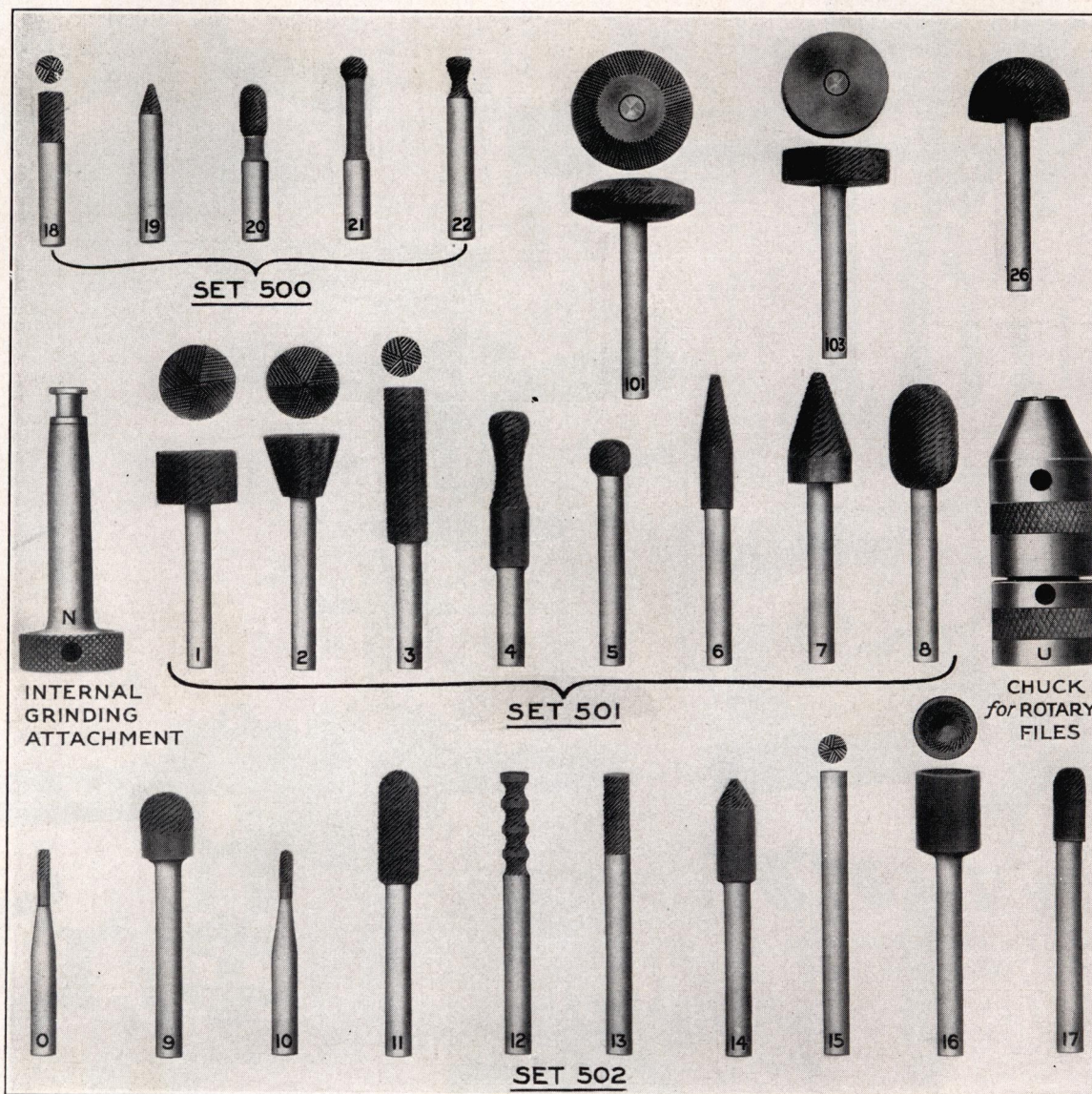


Small Right Angle Grinding Wheel  
Attachment



## ROTARY FILES

Hand Cut—Fine or Coarse—Made from High-speed Steel



The above illustration shows many shapes and sizes of Rotary Files made of High Speed Steel and used in connection with our Flexible Shaft Machines. The chuck-U- is arranged to attach direct to the hand spindles of our machines and will receive the shanks of all the Rotary Files shown above. Attachment N is used for operating very small diameter grinding wheels and is also arranged to attach direct to our hand spindles. Metal Pattern Makers and Die Sinkers especially will appreciate the value of the Rotary Files. They operate very successfully on aluminum, brass, cast iron and steel.

SOLD IN SETS or SINGLE LOTS as required—also in COARSE or FINE CUT.  
In ordering specify by number either in SETS or Single Files.

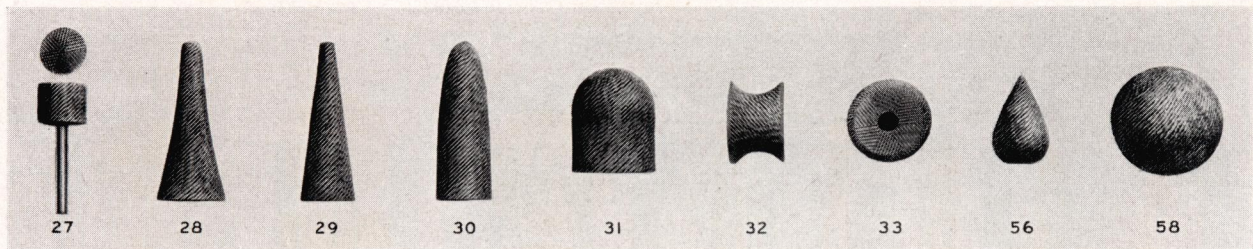
Illustration of Rotary Files are about one-half actual size. Shanks are all  $\frac{1}{4}$ " diameter. Various other shapes and sizes furnished on special order.





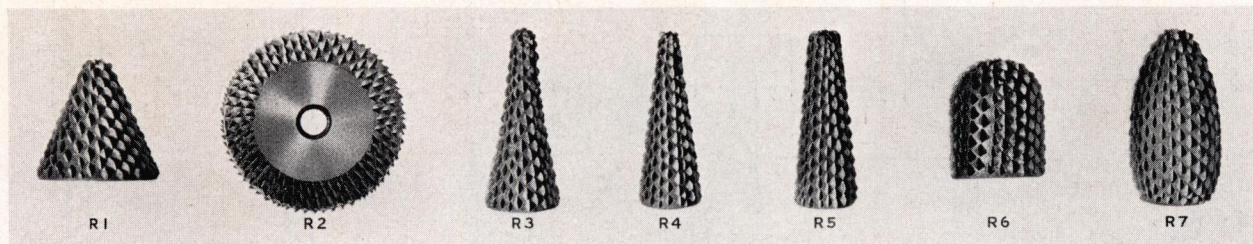
## ROTARY FILES (Large Sizes)

HAND CUT—HIGH SPEED STEEL



| File No. | Diam.            | Length          | Tapped                    | File No.                               | Diam.            | Width            | Tapped                 |
|----------|------------------|-----------------|---------------------------|----------------------------------------|------------------|------------------|------------------------|
| 27       | $\frac{7}{8}$ "  | $\frac{3}{4}$ " | $\frac{1}{4}$ " Rd. Shank | 32                                     | $1\frac{1}{2}$ " | 1 "              | $\frac{3}{8}$ -16 Thd. |
| 28       | $1\frac{1}{4}$ " | 3 "             | $\frac{3}{8}$ -16 Thd.    | 33                                     | $1\frac{1}{2}$ " | $\frac{3}{8}$ "  | $\frac{3}{8}$ Plain    |
| 29       | 1 "              | 3 "             | $\frac{3}{8}$ -16 Thd.    | 56                                     | 1 "              | $1\frac{5}{8}$ " | $\frac{3}{8}$ -16 Thd. |
| 30       | 1 "              | 3 "             | $\frac{3}{8}$ -16 Thd.    | 58                                     | 2 "              | Diam.            | $\frac{3}{8}$ -16 Thd. |
| 31       | $1\frac{1}{2}$ " | 2 "             | $\frac{3}{8}$ -16 Thd.    | Other Sizes Furnished on Special Order |                  |                  |                        |

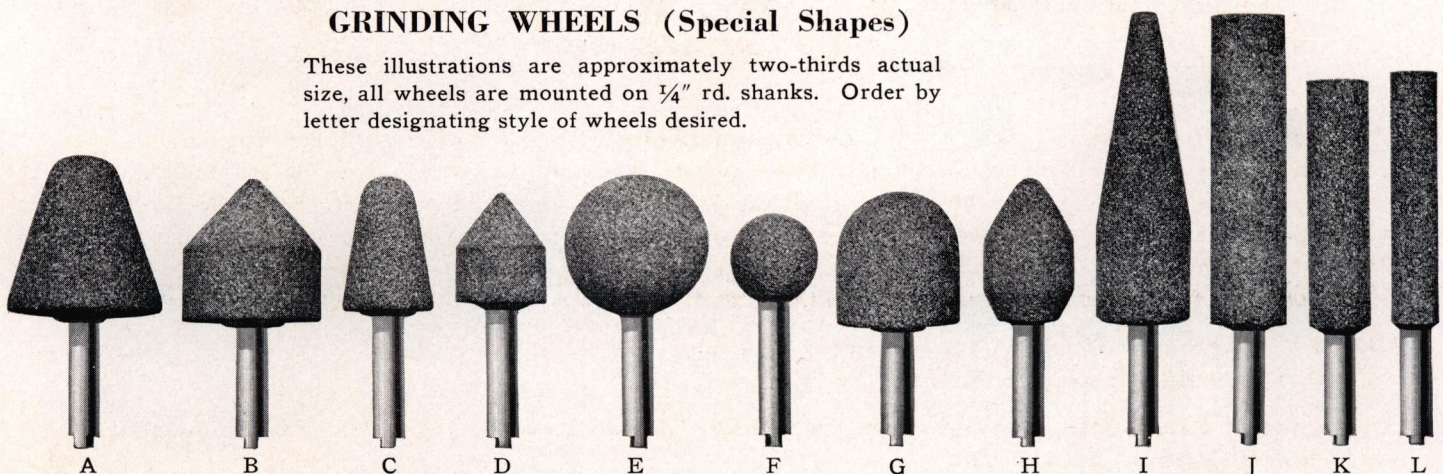
## ROTARY RASPS (Hand Cut)



| Rasp No. | Diam.            | Length          | Tapped                 | Rasp No.                               | Diam.            | Length | Tapped                 |
|----------|------------------|-----------------|------------------------|----------------------------------------|------------------|--------|------------------------|
| R1       | 2 "              | 2 "             | $\frac{3}{8}$ -16 Thd. | R5                                     | 1 "              | 3 "    | $\frac{3}{8}$ -16 Thd. |
| R2       | 3 "              | $\frac{1}{2}$ " | $\frac{3}{8}$ -16 Thd. | R6                                     | $1\frac{1}{2}$ " | 2 "    | $\frac{3}{8}$ -16 Thd. |
| R3       | $1\frac{1}{4}$ " | 3 "             | $\frac{3}{8}$ -16 Thd. | R7                                     | $1\frac{1}{2}$ " | 3 "    | $\frac{3}{8}$ -16 Thd. |
| R4       | 1 "              | 3 "             | $\frac{3}{8}$ -16 Thd. | Other Sizes Furnished on Special Order |                  |        |                        |

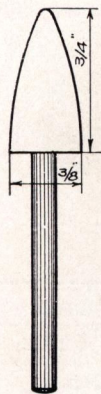
## GRINDING WHEELS (Special Shapes)

These illustrations are approximately two-thirds actual size, all wheels are mounted on  $\frac{1}{4}$ " rd. shanks. Order by letter designating style of wheels desired.

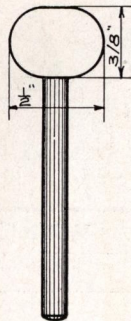




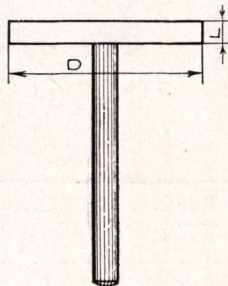
**GRINDING WHEELS (Full Size) MOUNTED ON  $\frac{1}{8}$ " RD. SHANKS**



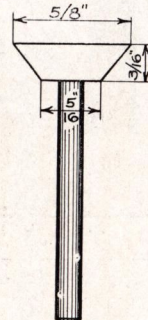
M3



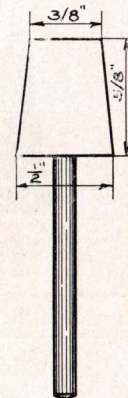
N3



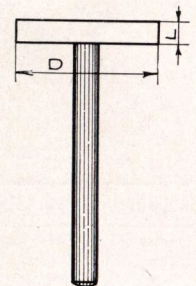
O3



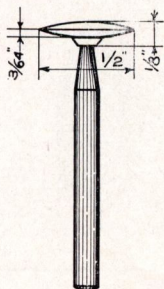
P3



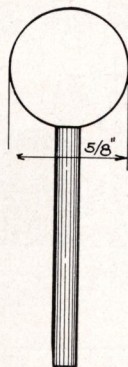
Q3



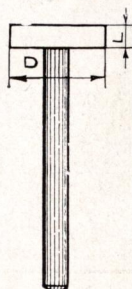
R3



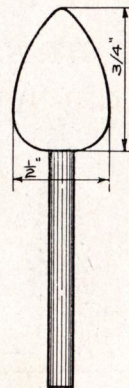
S3



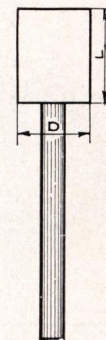
T3



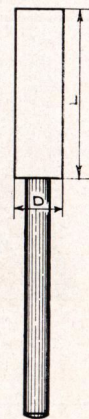
U3



V3



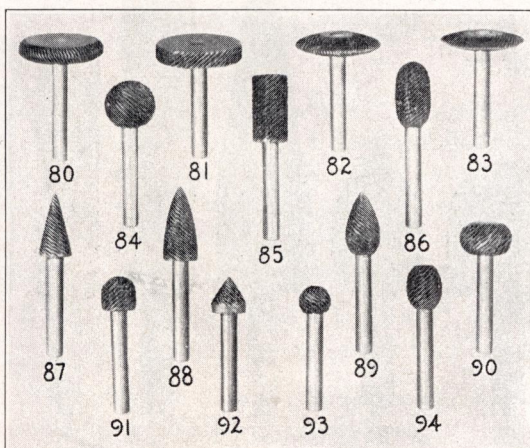
W3



X3

**SMALL SIZE**

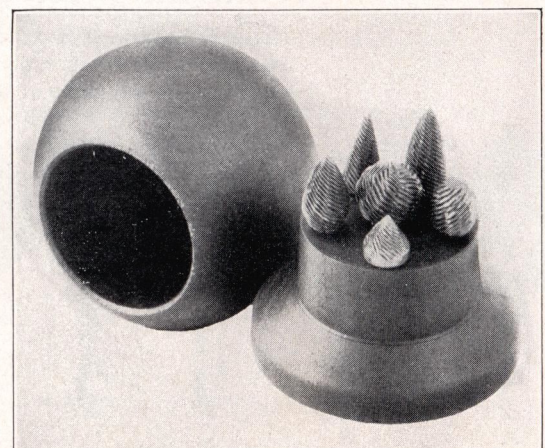
High Speed Steel, Hand Cut Rotary Files



These  
Illustrations  
Are  
Approximately  
Two-thirds  
Actual Size  
  
All  $\frac{1}{8}$ " Round  
Shanks

**ROTARY FILES**

Jewelers Set

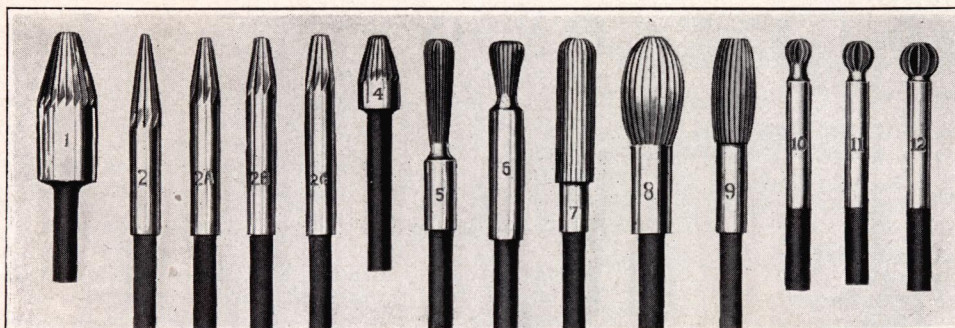






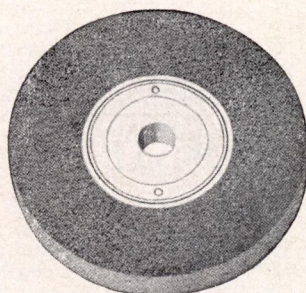
## SET—O SCRAPING BURS

¼" ROUND SHANKS



NOTE—Above illustration about one-half actual size.

## GRINDING WHEELS



Manufactured of Artificial Abrasive

One of the most valuable attachments for our FLEXIBLE SHAFT EQUIPMENTS is the Grinding Wheel. We therefore are prepared to include with all our equipments suitable wheels for various classes of work when so ordered.

Always state the class of grinding to which the wheel will be applied.

| Diam. | THICKNESS OF WHEELS IN INCHES |      |      |      |      |       |       |
|-------|-------------------------------|------|------|------|------|-------|-------|
|       | ¼"                            | ⅜"   | ½"   | ¾"   | 1"   | 1¼"   | 1½"   |
| 1"    | .50                           | .50  | .50  | .55  | .55  | .65   | .75   |
| 1½"   | .60                           | .65  | .70  | .75  | .80  | .85   | .90   |
| 2"    | .65                           | .70  | .75  | .85  | .95  | 1.00  | 1.10  |
| 2½"   | .70                           | .75  | .80  | .95  | 1.05 | 1.15  | 1.30  |
| 3"    | .90                           | .95  | 1.05 | 1.20 | 1.35 | 1.50  | 1.80  |
| 4"    | 1.40                          | 1.50 | 1.70 | 2.00 | 2.35 | 2.70  | 3.00  |
| 5"    | 1.80                          | 2.00 | 2.30 | 2.70 | 3.20 | 3.65  | 4.10  |
| 6"    | 2.30                          | 2.60 | 2.90 | 3.50 | 4.10 | 4.70  | 5.30  |
| 8"    | 3.25                          | 3.75 | 4.25 | 5.30 | 6.25 | 7.25  | 8.30  |
| 10"   | 4.30                          | 5.15 | 5.90 | 7.45 | 9.00 | 10.50 | 12.25 |





## ATTACHMENTS AND SPECIFICATIONS

| Attach-<br>ment | Numbers in this column ➡➡➡<br>refer to the size of flexible shaft on which<br>attachments can be used.                                                                                                                                                                                                        | Flexible<br>Shaft<br>No. | Attach-<br>ment | Numbers in this column ➡➡➡<br>refer to the size of flexible shaft on which<br>attachments can be used.                                                                                                                                                                      | Flexible<br>Shaft<br>No. |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>A</b>        | No. 5—Length overall 11 $\frac{3}{4}$ "<br>No. 6-6A-7-7A—Length overall 17 $\frac{1}{2}$ "<br>Size Tool Post Shank No. 5— $\frac{1}{2}$ x1"<br>Size Tool Post Shank No. 6-6A-7-7A<br>$\frac{5}{8}$ x1 $\frac{1}{4}$ "                                                                                         | 5-6-6A<br>7-7A           | <b>O</b>        | Scraping Burs<br>All $\frac{1}{4}$ " Rd. Shanks                                                                                                                                                                                                                             | 2-4-5-6<br>6A-7-7A       |
| <b>B</b>        | Speeds {No. 5—13,400-18,000-20,000<br>{No. 6—8,800-12,000-18,000<br>Size of Heels {No. 5—1 $\frac{1}{4}$ x $\frac{1}{4}$ x $\frac{1}{4}$<br>{No. 6—2 x $\frac{1}{4}$ x $\frac{1}{4}$                                                                                                                          | 5-6-6A<br>7-7A           | <b>P</b>        | Grinding Wheels Sizes as Specified                                                                                                                                                                                                                                          | 2-4-5-6<br>6A-7-7A<br>8  |
| <b>C</b>        | Height Less Screw Feed 9"<br>Capacity— $\frac{1}{4}$ to $\frac{3}{4}$ "<br>No. 2 Morse Taper Socket<br>Gear Ratio—4 to 1                                                                                                                                                                                      | 6-6A-7<br>7A             | <b>Q</b>        | Leather Block Type Belt for No. 8 Coun-<br>tershaft Only                                                                                                                                                                                                                    | 8                        |
| <b>D</b>        | Diameter of Spindles<br>No. 2— $\frac{1}{4}$ "      No. 6-6A— $\frac{1}{2}$ "<br>No. 4— $\frac{3}{8}$ "      No. 7-7A— $\frac{3}{4}$ "<br>No. 5— $\frac{3}{8}$ "      No. 8— $\frac{3}{4}$ "                                                                                                                  | 2-4-5-6<br>6A-7-7A<br>8  | <b>R</b>        | V-Type Vulcanized Belts                                                                                                                                                                                                                                                     | 2-4-5-6<br>6A-7-7A       |
| <b>E</b>        | For Grinding Wheels<br>5"-6"-8"-10" Diam.                                                                                                                                                                                                                                                                     | 5-6-6A<br>7-7A-8         | <b>S</b>        | Grease for Flexible Shafts                                                                                                                                                                                                                                                  | 2-4-5-6<br>6A-7-7A<br>8  |
| <b>F</b>        | Lengths<br>No. 4-5-6-6A—5 $\frac{1}{2}$ "<br>No. 7-7A-8—6 $\frac{1}{4}$ "                                                                                                                                                                                                                                     | 4-5-6-6A<br>7-7A-8       | <b>T</b>        | Diam. at Large End—2 $\frac{1}{2}$ "<br>Diam. at Small End— $\frac{1}{4}$ "<br>Length of Cone—3 $\frac{1}{2}$ "<br>Threaded Hole— $\frac{3}{8}$ -16                                                                                                                         | 4-5                      |
| <b>G</b>        | Diam. 3" Length 5"<br>Fine Wire .006                                                                                                                                                                                                                                                                          | 4-5-6-6A<br>7-7A         | <b>U</b>        | Capacity $\frac{1}{4}$ " for Burs and Rotary Files                                                                                                                                                                                                                          | 2-4-5-6<br>6A-7-7A       |
| <b>H</b>        | Lengths as Required                                                                                                                                                                                                                                                                                           | 4-5-6-6A<br>7-7A-8       | <b>V</b>        | Diam. at Large End—3 $\frac{1}{4}$ "<br>Diam. at Small End— $\frac{1}{4}$ "<br>Length of Cone—5"                                                                                                                                                                            | 5-6-6A<br>7-7A-8         |
| <b>I</b>        | Diameter 4 $\frac{1}{2}$ " 5" 6" 8" 10"<br>Thickness 1" 1" 1" 1 $\frac{1}{2}$ " 1 $\frac{1}{2}$ "<br>With Cast Iron Hub                                                                                                                                                                                       | 5-6-6A<br>7-7A-8         | <b>W</b>        | 3x $\frac{1}{2}$ x $\frac{1}{4}$ —No. 2      8x1 x $\frac{3}{4}$ —No. 7<br>4x $\frac{3}{4}$ x $\frac{3}{8}$ —No. 4      8x1 $\frac{1}{2}$ x $\frac{3}{4}$ —No. 7A<br>5x $\frac{3}{4}$ x $\frac{3}{8}$ —No. 5      10x2 x $\frac{3}{4}$ —No. 8<br>6x1 x $\frac{1}{2}$ —No. 6 | 2-4-5-6<br>6A-7-7A<br>8  |
| <b>J</b>        | No. 2    No. 4    No. 5    No. 6    No. 6A<br>3x1    3x1 $\frac{1}{2}$ 3x3    4x3    4x3<br>No. 7    No. 7A    No. 8    { Other Sizes<br>6x3    6x3    6x3    { Special                                                                                                                                       | 2-4-5-6<br>6A-7-<br>7A-8 | <b>X</b>        | Ring Wheel for G1 Attachment<br>Diam. 6"    Thickness 1"    Height 1"                                                                                                                                                                                                       | 6-6A-7<br>7A-8           |
| <b>K</b>        | No. 2 No. 4 No. 5 No. 6 No. 6A No. 7 No. 7A<br>$\frac{3}{16}$ " $\frac{1}{4}$ " $\frac{3}{8}$ " $\frac{1}{2}$ " $\frac{1}{2}$ " $\frac{1}{2}$ " $\frac{1}{2}$ "                                                                                                                                               | 2-4-5-6<br>6A-7-7A       | <b>Y</b>        | Diam. 3"    Length 3"<br>Wire Ga. No. 30 or (.012)                                                                                                                                                                                                                          | 4-5-6-6A<br>7-7A-8       |
| <b>L</b>        | Reducing Couplings                                                                                                                                                                                                                                                                                            | 5-6                      | <b>Z</b>        | Rotary Files All $\frac{1}{4}$ " Rd. Shanks<br>U Chuck $\frac{1}{4}$ " Capacity<br>Grinding Attachment for 1 $\frac{1}{4}$ x $\frac{1}{4}$ x $\frac{1}{4}$ Wheels                                                                                                           | 2-4-5-6<br>6A-7-7A       |
| <b>M</b>        | Multi-Unit Couplings<br>For Joining Shafts Together                                                                                                                                                                                                                                                           | 2-4-5-6<br>6A-7<br>7A-8  | <b>10M</b>      | For MS4 Machine<br>Speed 10,000 R.P.M.                                                                                                                                                                                                                                      | 4                        |
| <b>N</b>        | No. 2<br>$\frac{1}{2}$ to 1"x $\frac{1}{4}$ x $\frac{1}{4}$<br>No. 4<br>$\frac{1}{2}$ to 1 $\frac{1}{4}$ "x $\frac{1}{4}$ x $\frac{1}{4}$<br>No. 5<br>$\frac{1}{2}$ to 1 $\frac{1}{4}$ "x $\frac{1}{4}$ x $\frac{1}{4}$<br>No. 6-6A-7-7A<br>$\frac{1}{2}$ to 1 $\frac{1}{2}$ "x $\frac{1}{4}$ x $\frac{1}{4}$ | 2-4-5-6<br>6A-7-7A       |                 |                                                                                                                                                                                                                                                                             |                          |





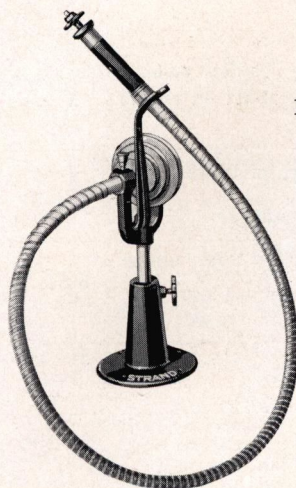
## ATTACHMENTS AND SPECIFICATIONS

| Attachment | Numbers in this column ➡➡➡<br>refer to the size of flexible shaft on which<br>attachments can be used.                                                                                                                    | Flexible<br>Shaft<br>No. | Attachment | Numbers in this column ➡➡➡<br>refer to the size of flexible shaft on which<br>attachments can be used.                                                                                                             | Flexible<br>Shaft<br>No.                           |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| A1         | Standard Collet— $\frac{1}{4}$ "<br>Other Size Collets Furnished                                                                                                                                                          | 2-4<br>5                 | P1         | Diameter—6" Length of Wire— $1\frac{1}{2}$ "<br>Threaded Hole— $\frac{5}{8}$ "<br>Heavy Wire Gauge No. 20 and 24                                                                                                   | 6-6A<br>7-7A<br>8                                  |
| B1         | Diam. Spindle—Space Between Flanges<br>No. 2— $\frac{1}{4}$ " No. 2— $\frac{3}{8}$ "<br>No. 4— $\frac{3}{8}$ " No. 4— $\frac{3}{4}$ "                                                                                     | 2-4                      | Q1         | Twisted Wire Brushes in Sections about<br>$\frac{1}{2}$ " Wide<br>No. 20 or 24 Gauge Wire<br>Diameters—4"-6"-8"-10"                                                                                                | 6-6A-7<br>7A-8                                     |
| C1         | Diam. Spindle—Space Between Flanges<br>No. 5— $\frac{3}{8}$ " No. 5—1"<br>No. 6-6A— $\frac{1}{2}$ " No. 6-6A— $1\frac{1}{4}$ "<br>No. 7-7A— $\frac{3}{4}$ " No. 7-7A— $1\frac{1}{2}$ "<br>No. 8— $\frac{3}{4}$ " No. 8—2" | 5-6-6A<br>7-7A-8         | R1         | Sanding Discs<br>Diameters—5"-7"-8"-9"                                                                                                                                                                             | 5-6-6A<br>7-7A<br>8                                |
| D1         | Length Overall—12" Diam. of Head—2"<br>Size Drills— $\frac{1}{8}$ "- $\frac{3}{8}$ "- $\frac{1}{4}$ "- $\frac{3}{8}$ "<br>Length of Drills from Head—1"                                                                   | 5                        | S1         | Lambs Wool Pad<br>Hood Type<br>Diameters—9"-10"                                                                                                                                                                    | 5-6-6A<br>7-7A<br>8                                |
| E1         | No. 4 Drives Screws to No. 10—Nuts $\frac{1}{4}$ "<br>No. 5 Drives Screws to No. 14—Nuts $\frac{3}{8}$ "<br>No. 6 Drives Screws to No. 18—Nuts $\frac{1}{2}$ "<br>No. 7 Drives Screws to No. 24—Nuts $\frac{3}{4}$ "      | 4-5-6<br>6A-7-7A<br>8    | T1         | Felt Pad<br>Diameters—7"-8"<br>Thickness— $\frac{1}{2}$ "                                                                                                                                                          | 5-6-6A-7                                           |
| F1         | Height Overall—6" Gear Ratio—1 to 1<br>Weight—2 $\frac{3}{4}$ lbs.<br>Capacity—0 to $\frac{1}{4}$ " and 0 to $\frac{3}{8}$ "<br>Diameter of Body—2"                                                                       | 4-5-6-6A                 | U1         | Special—With Adapters to Fit Any Grind-<br>ing Spindle for Bench or Floor Types or<br>Portable—Air or Electric Grinders                                                                                            | Special<br>for any<br>Style<br>Grinder<br>Spindles |
| G1         | Height Overall—7" Gear Ratio—1 to 1<br>Weight—10 lbs.<br>Capacity—6x1 Ringwheel<br>Diameter of Body—3 $\frac{1}{2}$ "                                                                                                     | 6-6A<br>7-7A-8           | V1         | Ball Bearing Direct Motor Couplings<br>Standard Bore for Motor Shafts<br>No. 2-No. 4-No. 5— $\frac{1}{2}$ "<br>No. 6-No. 6A-No. 7-No. 7A— $\frac{3}{4}$ "<br>No. 8—1"                                              | 2-4<br>5-6-6A<br>7-7A-8                            |
| H1         | Height Less Screw Feed—9 $\frac{1}{2}$ "<br>Length of Feed—3" Weight—22 lbs.<br>Capacity— $\frac{3}{4}$ " to 1 $\frac{1}{2}$ "<br>No. 4—Morse Taper<br>Worm Drive Ratio—12 to 1 Reduction                                 | 7A-8                     | W1         | Worm Drive Attachments<br>No. 4-No. 5-No. 6-No. 6A-No. 7-No. 7A<br>—10 to 1 Ratio<br>No. 8—12 to 1 Ratio                                                                                                           | 4-5-6<br>6A-7-7A<br>8                              |
| J1         | Height Overall 5 $\frac{1}{2}$ " Gear Ratio—1 to 1<br>Weight—4 lbs.<br>Diameter of Body—2 $\frac{1}{2}$ "<br>Diameter Steel Disc—5"                                                                                       | 5-6-6A                   | X1<br>X2   | X1 Gear Ratio—1 to 1 Dia. Housing 2 $\frac{5}{8}$ "<br>X2 Gear Ratio—2 to 1 Weight 5 $\frac{1}{4}$ lbs.<br>Height Overall—4 $\frac{1}{4}$ "<br>Diameter Flexible Pad—8"                                            | 6-6A-7<br>7A                                       |
| K1         | Height Overall—7" Gear Ratio—1 to 1<br>Weight—10 lbs.<br>Diameter of Body—3 $\frac{1}{2}$ "<br>Diameter Sanding Pad—9"                                                                                                    | 6-6A-7<br>7A-8           | Y1         | Right Angle Grinding Attachment—Water<br>Feed Through Spindle<br>For Cup Shape or Ring Wheels—6" Diam.                                                                                                             | 6-6A-7<br>7A-8                                     |
| L1         | Height Including Pad—4"<br>Diameter of Body—2"<br>Diameter of Sanding Pad—7"<br>Weight—3 $\frac{3}{4}$ lbs. Gear Ratio—1 to 1                                                                                             | 5<br>5A                  | Z1         | Right Angle Grinding Attachment—Water<br>Feed Through Spindle<br>For Polishing with Felt Pads or Small<br>Size Cup or Ring Wheels                                                                                  | 5-6<br>6A                                          |
| M1         | Small Rubber Sanding Drum<br>Diameter— $\frac{1}{2}$ "- $\frac{3}{4}$ "-1"—All 1 $\frac{1}{2}$ " Wide<br>Mounted— $\frac{1}{4}$ " Rd. Shank                                                                               | 2-4<br>5-6               | A2         | Large Size Right Angle Grinding Attach-<br>ment for Regular Wheels<br>6" to 8" Diameter 1" Thickness<br>Weight—10 lbs. Gear Ratio—1 to 1                                                                           | 6-6A<br>7-7A-8                                     |
| N1         | Tapered Rubber Sanding Drum<br>Large End Diameter—2 $\frac{1}{2}$ "<br>Small End Diameter— $\frac{3}{4}$ "<br>Length—3"                                                                                                   | 4-5-6<br>6A              | B2         | Small Size Right Angle Grinding Attach-<br>ment for Regular Wheels<br>3" to 5" Diameter $\frac{1}{2}$ " Thickness<br>Weight—3 $\frac{1}{2}$ lbs. Gear Ratio—1 to 1                                                 | 5-6-6A                                             |
| O1         | 3x $\frac{1}{2}$ x $\frac{1}{4}$ 6x1 x $\frac{1}{2}$ Plain<br>4x $\frac{3}{4}$ x $\frac{3}{8}$ 8x1 x $\frac{3}{4}$ Wire<br>5x 1x $\frac{3}{8}$ 8x1 $\frac{1}{2}$ x $\frac{3}{4}$ Brushes<br>10x2 x $\frac{3}{4}$          | 2-4<br>5-6-6A<br>7-7A-8  | L2<br>M2   | L2 Height Overall—4"<br>Diameter of Body—2"<br>Diameter of Pad—7"<br>Weight—3 $\frac{3}{4}$ lbs.<br>Gear Ratio—2 to 1 Reduction<br>M2 Carborundum Flexible Rubber Sanding<br>Pads—Steel Back<br>Diameters—7"-8"-9" | 5-5A<br>5-6-6A<br>7-7A-8                           |

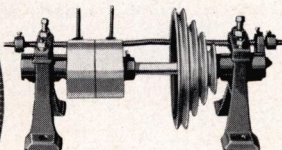




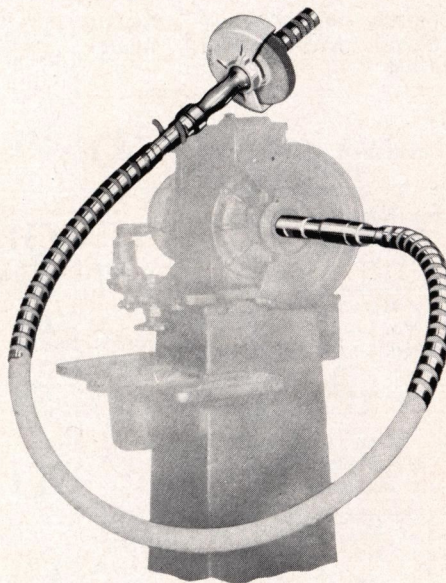
## A FEW ADDITIONAL MACHINES AND ATTACHMENTS



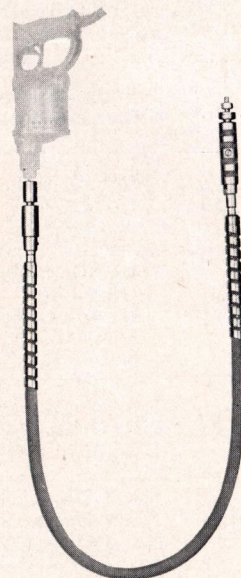
Belt Driven Machines  
Bench and Floor  
Types  
Several Sizes  
C-Type



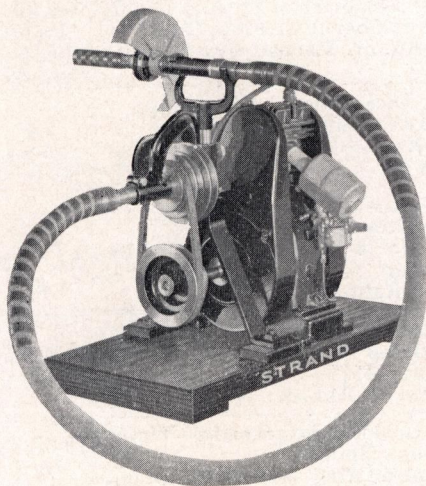
Flexible Shafts Attached to Standard  
Grinding Machines— $\frac{1}{8}$  to 2 H. P.



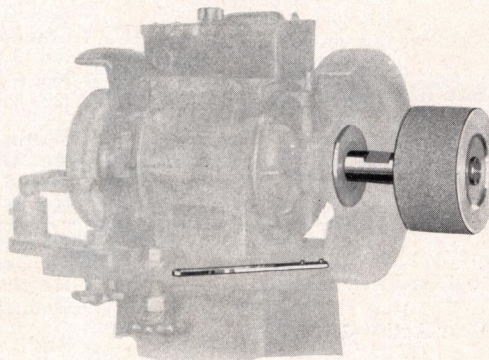
Flexible Shafts Driven  
from Electric Drills  
 $\frac{1}{8}$  to 2 H. P.



Gas Motor Driven Machines  
Several Sizes

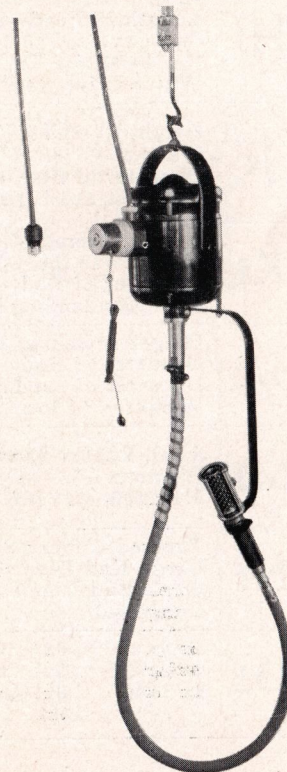


Rubber Sanding Drums  
Several Sizes

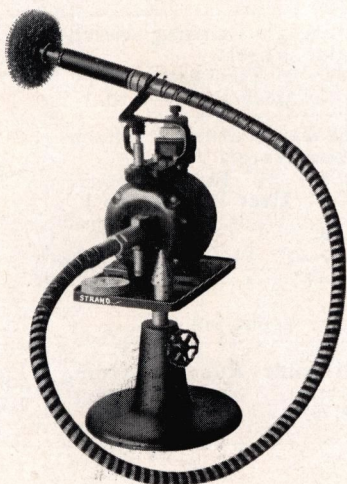


Horizontal Type

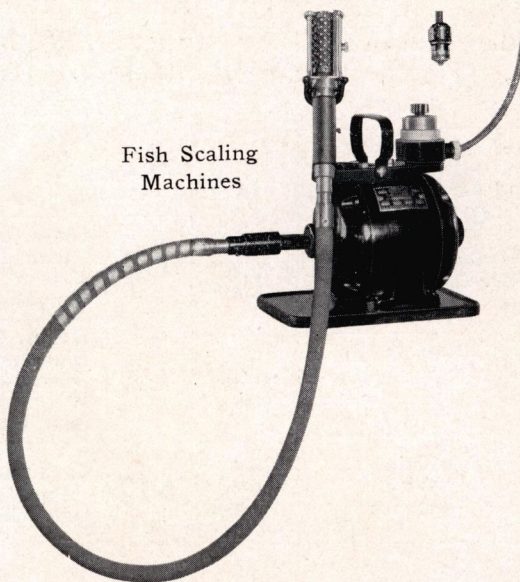
Vertical Type Fish  
Scaling Machines



Tire Buffing Machines



Fish Scaling  
Machines







## TERMS

To customers with satisfactory rating in Financial, Commercial and leading Mercantile Agency reports or reference otherwise satisfactory, we offer our regular terms of credit, which are 30 days net or 2% 10 days from invoice dating.

## GUARANTEE

Our Flexible Shafts and Equipments are all thoroughly inspected and tested before shipment. We avoid in every way possible the use of any but the very highest grade materials entering into the manufacture of our goods.

In addition to this we extend to the purchaser of our Flexible Shafts and Equipment our guarantee against all imperfection in construction or defects in materials.

## SHIPMENTS

Are all strictly F. O. B. Chicago.

## EXPORT SHIPMENTS

Our terms on all export shipments except to foreign customers already well known commercially, or who may arrange in advance a special credit in New York or Chicago for payment against our export shipping documents will be cash with order.

## TRIAL MACHINES

In general we do not solicit orders for machines "On Trial," for the reason that we have demonstrated in thousands of plants throughout the U. S. and foreign countries the complete success of our equipments. If, however, a customer is doubtful of our machines being adaptable to his work and desires to order one of our equipments on a ten-day trial basis we will ship the same in United States only provided full information pertaining to proposed operation is first submitted to us and with this understanding, that in case of non-acceptance, THE MACHINE WILL BE RETURNED IN FIRST-CLASS CONDITION, AND ALL TRANSPORTATION CHARGES PREPAID, and return shipment made within ten days after receipt of machine.

## REFERENCE CODE

|                                       | CODE    |
|---------------------------------------|---------|
| Ship by express.....                  | MAJESTY |
| Ship by freight.....                  | MORAL   |
| Ship quickest way.....                | MECK    |
| When can you ship.....                | MILAN   |
| Enter our order for.....              | MERT    |
| Answer by wire when you can ship..... | MORIN   |
| Quote net price on.....               | MUTTER  |
| Referring to your order.....          | MATRIX  |
| Referring to your letter.....         | MAWL    |
| Ship C. O. D. by express.....         | AVERT   |
| Ship C. O. D. by freight.....         | GIBIT   |
| Ship via air mail.....                | AVONA   |
| Ship Parcel Post.....                 | TOTAL   |
| Referring to your telegram.....       | RETEL   |





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**TELEGRAPHIC CODE**

**NOTE CAREFULLY**

**VOLTAGE—CYCLE—PHASE**

| Cat'g<br>Page | Type<br>Machine | Voltage, Cycle and Phase         | 110 Volt<br>60 Cycle<br>1 Phase | 220 Volt<br>60 Cycle<br>1 Phase | 220 Volt<br>60 Cycle<br>3 Phase | 110<br>Direct<br>Current | 220<br>Direct<br>Current |
|---------------|-----------------|----------------------------------|---------------------------------|---------------------------------|---------------------------------|--------------------------|--------------------------|
|               |                 |                                  | Code                            | Code                            | Code                            | Code                     | Code                     |
|               |                 | Complete Machines as Illustrated |                                 |                                 |                                 |                          |                          |
| 4             | M2              | .....                            | Ace                             | Acre                            | Acorn                           | Arab                     | Atom                     |
| 5             | MS2             | .....                            | Beto                            | Bert                            | Bold                            | Bink                     | Bolon                    |
| 6             | MS4             | .....                            | Crust                           | Cody                            | Cupper                          | Calo                     | Cader                    |
| 7             | RF-M4           | .....                            | Dole                            | Dane                            | Domer                           | Dot                      | Dimp                     |
| 8             | M5              | .....                            | Enod                            | Evade                           | Erate                           | Ewan                     | Eper                     |
| 9             | MP5             | .....                            | Fran                            | Fame                            | Frolic                          | Fret                     | Falet                    |
| 10            | M5A             | .....                            | Granit                          | Gasel                           | Glet                            | Goron                    | Gepa                     |
| 11            | M6              | .....                            | Haret                           | Haler                           | Heter                           | Hale                     | Holar                    |
| 12            | M6C             | .....                            | Iota                            | Inoe                            | Inop                            | Iano                     | Itor                     |
| 13            | M6A             | .....                            | Iler                            | Ivan                            | Iber                            | Iter                     | Ilan                     |
| 14            | M7              | On Caster Base.....              | Joep                            | Jake                            | Jano                            | Jerry                    | Jaken                    |
| 15            | M7              | On Four Wheel Truck.....         | Joban                           | Jert                            | Jolat                           | Jarvit                   | Java                     |
| 16            | M7A             | .....                            | Kalon                           | Kater                           | Kert                            | Kamo                     | Kron                     |
| 17            | M8              | .....                            | Kalis                           | Kemp                            | Kora                            | Kate                     | Krot                     |
| 18            | No. 4           | Specify Speed and Code.....      | Komet                           | Krato                           | Klan                            | Kafer                    | Kolb                     |
| 18            | No. 5           | Specify Speed and Code.....      | Libby                           | Litor                           | Lake                            | Lafe                     | Lopet                    |
| 19            | No. 6           | Specify Speed and Code.....      | Lago                            | Leat                            | Liger                           | Lora                     | Lonar                    |
| 19            | No. 6A          | Specify Speed and Code.....      | Mertis                          | Mohawk                          | Mater                           | Mogul                    | Mavid                    |
| 19            | No. 7           | Specify Speed and Code.....      | Mirn                            | Mula                            | Mort                            | Moka                     | Mist                     |
| 20            | ML5             | .....                            | Noka                            | Nern                            | Nate                            | Nig                      | Nova                     |
| 21            | ML6             | .....                            | Nepa                            | Nero                            | Nag                             | Navat                    | Nika                     |
| 22            | V4              | Specify Speed and Code.....      | Olin                            | Opert                           | Oken                            | Owert                    | Oftak                    |
| 22            | V5              | Specify Speed and Code.....      | Nora                            | Nepo                            | Neta                            | Naka                     | Novat                    |
| 23            | V6              | Specify Speed and Code.....      | Norp                            | Neclo                           | Nap                             | Nolad                    | Naram                    |
| 23            | V6A             | Specify Speed and Code.....      | Orad                            | Oppar                           | Otic                            | Omand                    | Orat                     |
| 23            | V7              | Specify Speed and Code.....      | Prot                            | Pelto                           | Prag                            | Peno                     | Prest                    |
| 23            | V7A             | Specify Speed and Code.....      | Peg                             | Pero                            | Paler                           | Pema                     | Piner                    |
| 23            | V8              | Specify Speed and Code.....      | Prega                           | Plano                           | Pent                            | Procter                  | Pebble                   |
| 24            | AB-M5           | .....                            | Quodat                          | Quato                           | Quale                           | Qaita                    | Quill                    |
| 25            | AB-D5           | .....                            | Raillet                         | Rotone                          | Rasto                           | Russet                   | Revet                    |
| 26            | AB-T6           | .....                            | Remont                          | Rocot                           | Realt                           | Rosen                    | Ruffle                   |
| 27            | AB-D6           | .....                            | Rocta                           | Ralt                            | Rator                           | Rost                     | Rawan                    |
| 28            | AB-V6           | .....                            | Teco                            | Temp                            | Trant                           | Topal                    | Trift                    |
| 29            | Millstone       | Grinder—Less Stand               | Unac                            | Ucon                            | Unert                           | Ucor                     | Utona                    |
| 30            | SS-7            | .....                            | Verca                           | Velt                            | Vam                             | Vict                     | Vant                     |





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NOTE CAREFULLY

### VOLTAGE—CYCLE—PHASE

| Cat'g<br>Page | Type<br>Machine | Voltage, Cycle and Phase         | 110 Volt<br>60 Cycle<br>1 Phase | 220 Volt<br>60 Cycle<br>1 Phase | 220 Volt<br>60 Cycle<br>3 Phase | 110<br>Direct<br>Current | 220<br>Direct<br>Current |
|---------------|-----------------|----------------------------------|---------------------------------|---------------------------------|---------------------------------|--------------------------|--------------------------|
|               |                 | Complete Machines as Illustrated | Code                            | Code                            | Code                            | Code                     | Code                     |
| 31            | FR-V6           | Vertical .....                   | Senna                           | Sensate                         | Sepia                           | Sepoy                    | Sentry                   |
| 32            | FR-M6           | Floor Type.....                  | Ebony                           | Ecarte                          | Echo                            | Eclat                    | Edit                     |
| 33            | FR-M6           | Suspension Type.....             | Eject                           | Elate                           | Enact                           | Endow                    | Endure                   |
| 34            | No. 4           | .....                            | Entrap                          | Erratic                         | Evade                           | Event                    | Evict                    |
| 34            | No. 5           | .....                            | Esteem                          | Everse                          | Excerpt                         | Excise                   | Exclod                   |
| 35            | No. 6           | .....                            | Excose                          | Excrete                         | Exect                           | Exegate                  | Escapo                   |
| 35            | No. 7           | .....                            | Rowel                           | Rubicon                         | Rumble                          | Ruta                     | Rutter                   |
| 36            | No. 4           | .....                            | Redout                          | Reek                            | Regale                          | Relax                    | Relent                   |
| 36            | No. 5           | .....                            | Retina                          | Ribald                          | Robust                          | Rochet                   | Rodent                   |
| 36            | No. 6           | .....                            | Romaic                          | Romish                          | Ropalic                         | Rapole                   | Rotart                   |
| 36            | No. 7           | .....                            | Rabato                          | Rabid                           | Racoon                          | Raddle                   | Rafter                   |

## FLEXIBLE SHAFTS

### CORES—CASINGS AND SPINDLES

Add to Code "Metal" or "Vulcanized" Covered Casing as Required

| Cat'g<br>Page | Size Numbers                              | 2     | 4      | 5      | 6      | 6A     | 7      | 7A     | 8      |
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|               | Wire core with ends.....                  | Heap  | Holi   | Harig  | Heanop | Heapor | Hedent | Heroit | Hazel  |
|               | Casing with couplings.....                | Lista | Livery | Lack   | Lanky  | Lancet | Lament | Ladify | Locus  |
|               | Core and casing.....                      | Lirop | Lirod  | Levi   | Levig  | Liban  | Libell | Licro  | Lirple |
|               | Hand spindle ball bearing.....            | Nonna | Nonet  | Nokorl | Nokolt | Norter | Nosbil | Noken  | Nokert |

## ATTACHMENTS

(See Pages 50 to 57)

Attachments are designated by letters and numbers. When ordering, specify attachments accordingly, and state size of flexible shaft or type of machine on which attachments are to be used.





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